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AN APPLICATION OF THE RESOURCE REQUIREMENTS PREDICTION MODEL TO A SMALL ALBERTA SCHOOL: GRADES 1 TO 12

by

© ANTHONY ROBERT ALFRED MARSHALL

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
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EDMONTON, ALBERTA
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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "An Application of the Resource Requirements Prediction Model to a Small Alberta School: Grades 1 to 12" submitted by Anthony Robert Alfred Marshall in partial fulfilment of the requirements for the degree of Master of Education.

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Date Sept. 14/1973

ABSTRACT

The Resource Requirements Prediction Model (RRPM) was designed as an instructional cost simulation model for post-secondary institutions. Experience with applying the model to a community college suggested that the RRPM was sufficiently flexible to be applicable to a school. The purpose of this study was to determine whether the model could be used to simulate a school and the usefulness of such an application. Version 1.6, of the RRPM, was used exclusively in this study.

The school to be used in the study was selected on the basis of four criteria: 1. that the school be small enough to facilitate data collection; 2. that there be a range of grades; 3. that there be diversity in senior high school programs; and 4. that the school administration be cognizant of management techniques.

Staff work summaries, obtained from the school, provided information on staff work loads, class sizes, and the duration of classes. Student data, also obtained from the school, included grade level and courses taken. Information on expenditures other than salaries, was obtained from both the county office and the principal. The county office also provided staff salary data.

The data were used to model the school in five applications of the RRPM 1.6. The parameters required for

the simulation of the school were derived from these same data. Following the development of a satisfactory model of the school, the principal was consulted for the purpose of obtaining enrolment projections, and other information, to provide a basis for a variety of simulations. These simulations included a time-series prediction of annual expenditures to 1980/81. In addition, a number of changes to the school, suggested in discussion with the principal, were simulated.

The accuracy, with which the RRPM 1.6 simulated the school, was determined by comparing the values calculated by the model with those derived directly from raw data. The usefulness of applying the RRPM was assessed by interviewing the principal and superintendent of schools to determine their opinions.

While the model accurately simulated the current operation of the school, other simulations were suspect since the model did not accurately represent the relationship between enrolments and number of FTE faculty. The information reported by the RRPM 1.6 was found to be highly relevant to decision-making at the county level but less so in the school. The reduced usefulness at the school level, was a consequence of the level of aggregation necessary to provide a stable base for prediction, i.e., insufficient detail was provided.

ACKNOWLEDGEMENTS

The writer wishes to thank Dr. D. M. Richards, thesis advisor, for his advice and assistance with this study. Appreciation is extended to county and school personnel, particularly the principal, for their cooperation. Finally, thanks and appreciation go to my wife, Maire, for her assistance throughout the year.

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Chapter 1

STATEMENT OF THE PROBLEM AND ITS SIGNIFICANCE

This chapter contains four sections. The first of these provides some information on the development of the Resource Requirements Prediction Model and on the background to this study. The second section contains a statement of the problem investigated and the sub-problems implicit in that problem. The third section provides some definitions relevant to a discussion of the function and nature of the model as an administrative tool while the final section outlines the organization of the thesis and includes a summary of Chapter 1.

INTRODUCTION

The Resource Requirements Prediction Model (RRPM), version 1.6, was designed as an instructional cost simulation model for post-secondary institutions (Clark et al., 1972:1). The model consists of a set of six computer programs which accept certain data and generate reports which provide cost-analytic data for use in administrative decision-making.

Development of the Model

The RRPM was developed at the National Center for

Higher Educational Management Systems (NCHEMS) at The Western Interstate Commission for Higher Education (WICHE) over a period of several years. The current version, number 1.6, of the RRPM was released in December of 1972 and is an evolutionary product based on experiences with previous NCHEMS products, specifically RRPM 1.3 and the Cost Estimation Model (Clark et al., 1972:1).

Background of the Study

Certain faculty members of the Department of Educational Administration of the University of Alberta, viz., Dr. D.M. Richards and Dr. E. Seger, directed a project which included the application of the RRPM 1.3 to a community college. On the basis of their experiences with this project they felt that the RRPM was sufficiently flexible to be potentially applicable to a school. From their belief this study originated.

STATEMENT OF THE PROBLEM

The problem in this study arises from the potential for application to a school due to the flexibility of the RRPM 1.6. The problem is two-fold, being concerned firstly with the extent to which the RRPM 1.6 can model and simulate a school, and secondly with the value of its use.

The Problem

The problem being investigated in this study can be expressed in the form of a question:

Can the RRPM 1.6 be usefully applied to a school?

However the statement of the problem in the form of a single question does not provide a useful basis for investigation. Analysis of the question suggests a number of sub-problems which form the basis for this study.

Sub-Problems

The sub-problems selected for investigation in this study are represented by the questions enumerated below.

1. Can the RRPM 1.6 be used to model a school?
2. Can the RRPM 1.6 be used to simulate a school?
3. How useful is the RRPM 1.6, as a tool for administrative decision-making at different levels of organization?

SIGNIFICANCE OF THE PROBLEM

Carpenter and Haggert (1970:28) suggest that resource allocation problems can be handled most easily and consistently where a resource/cost model of the district has been developed. Such a model would comprise a set of mathematical expressions that relate parameters, describing the district and the programs, to estimates of costs and resource requirements. The advantage of such a model is (Carpenter and Haggert, 1970:28) that the analyst can formulate a description of the district at each future date and simulate the results of conducting each alternative program within the district. If the RRPM 1.6 were to prove sufficiently flexible to adequately model and simulate a school then its implementation in all schools in a district would provide a resource/cost allocation model with the advantages mentioned above.

DEFINITIONS

Certain terms will be used throughout the thesis in describing the function or use of the model. The definitions which follow are not only intended to minimize semantic difficulties but also to place the model in context. These definitions should both assist in understanding the model and provide a basis for its evaluation.

Cost Analysis

The literature related to cost analysis has been extensively reviewed in a number of recent theses (Fennel, 1972; Meek, 1972; Purkess, 1971), which are available if additional information is required. For the purposes of this study a general definition is most useful. Hull (1961:732) suggests that cost analysis attempts " . . . to allocate measurable costs to predetermined units for a given period of time." A general definition is most appropriate for the purposes of this study since both the costs which can be accounted for and the units to which those costs can be allocated, are determined by the model. Witner (1967:1) identifies some potential units to which resources may be allocated, viz., a contact period, credit, a major program, course or student, most of which are used in the RRPM 1.6.

Models, Modelling, and Simulation

Stallard (1970:12) uses the term "model" to represent a set of abstract relationships that are analogous to relationships perceived or conceived to be of the real world. He qualifies this definition by limiting the relationships considered to those which are most important, significant, or relevant to the purpose of the model. This definition is supported by Chestnut (1965:108) who defines a model as a " . . . qualitative or quantitative representation of a process or endeavour that shows the effects of those factors which are significant for the purposes being considered." Where the relationships are mathematical in nature the model may be categorized as a mathematical model of which the RRPM 1.6 is an example.

Modelling is the process or system while simulation determines how the process or system will react to various conditions or situations it may encounter (Chestnut, 1965:107). In terms of the RRPM 1.6 the modelling phase consists of defining organizational characteristics, in terms appropriate to the model, and the various mathematical relationships that the model can represent. The simulation phase involves the calculation of the parameters required by the RRPM 1.6 and the analysis of the reports generated.

ORGANIZATION OF THE THESIS

Chapters 1,3 and 4 are directly concerned with the research process while chapter 2 introduces the RRPM. The remaining chapter provides a summary of the investigation together with some comments based on the experience gained in carrying out the study.

Summary of Chapter 1

The RRPM 1.6 is a computer based instructional cost simulation model which is sufficiently flexible to be potentially applicable to a school. This potential raises questions related to the possibility of applying the model to a school and the usefulness of such an application. The problem to be investigated is expressed in the form of three questions covering these two areas.

A number of terms used in discussing the RRPM are defined to minimize semantic difficulties, i.e., cost analysis, model, modelling, and simulation.

Succeeding Chapters

Chapter 2 provides an overview of the RRPM 1.6. After a general introduction the chapter continues with a discussion of the types of data used by the model and their application to a school. The research design is discussed in chapter 3 while the analytic procedures used, together with the findings are described in chapter 4. Chapter 5 provides a summary of the findings together with a statement of conclusions, implications, and suggestions for further research.

Chapter 2

THE RESOURCE REQUIREMENTS PREDICTION MODEL

This chapter provides an introduction to the Resource Requirements Prediction Model (RRPM), version 1.6, and an outline of its intended use. The second section consists of a discussion of the types of data used in applying the RRPM 1.6 to a school. One focus of this discussion is the number of options available for defining the data in terms appropriate to a school. The third section describes the data contained in the reports generated by the model, while the final section of the chapter summarizes the problems arising from the application, to a school, of a model designed for post-secondary institutions.

INTRODUCTION TO THE RRPM 1.6

The Resource Requirements Prediction Model (RRPM), version 1.6, consists of six computer programs written in the COBOL programming language. These programs accept various institutional parameters and the mathematical relationships between certain of these parameters. Using these parameters and relationships, together with other mathematical relationships fixed by the model, the programs control the calculation of various unit costs and planning parameters, and the generation of a set of reports detailing these.

USE OF THE MODEL

The first phase in the implementation of the RRPM 1.6 is to collect the raw data. The second phase is to decide on definitions, appropriate to the institution, of terms used by the model. The third phase is the calculation of the institutional parameters required by the model, using definitions decided upon. Using these parameters the school is then simulated for the purpose of validating the model, by comparing variables calculated by the RRPM 1.6 with actual values. The data set consisting of both input and calculated data is termed an "iteration." Having developed a validated model for the particular institution, simulations are now possible.

Once a base iteration has been calculated, simulation of changes in the institution is possible. The modifications of institutional parameters necessary to effect the change being simulated, are used by the model to calculate the values of variables representing the effect of the simulated change. A series of reports may then be generated from the data of this new iteration.

An awareness of the deterministic nature of the

RRPM 1.6 is essential for correct interpretation of the reports. As a consequence of the deterministic nature of the model, the reports represent what will actually occur should the input data and mathematical relationships accurately represent reality. Meaningful interpretation of the reports is thus dependent upon a knowledge of the accuracy of the input data and the validity of the model.

INPUT DATA

Many of the terms used to describe the input data required by the RRPM 1.6 are couched in terms more appropriate to post-secondary institutions. This is a natural consequence of the intent of the developers to provide a model for such institutions. However considerable flexibility is available in the definitions which may be used with the terms and in some cases renaming is possible. In the remainder of this section each type of datum is discussed in relation to a school. Information on these data is contained in an introduction to the RRPM 1.6 (Clark et al., 1972) which is part of the documentation of the model. In this discussion the terms "parameter" and "variable" have specific referents.

In the context of this study the term parameter is taken to mean either a property of the institution, the value of which is derived from raw data, or the value of such a property. The term variable will be used to mean a property of the institution, the value of which is calculated by the RRPM 1.6. Thus the same property may be a parameter in one situation and a variable in another.

Definitions

Seven possible definitions may be provided. They are: organizational levels; course levels; student levels; instruction types; faculty ranks; staff categories; and other expense types. If definitions are not provided the RRPM 1.6 will provide meaningful identifiers.

Organizational levels. A maximum of three organizational levels may be defined. If no definitions are provided they will be called discipline, department, and school. The institution may be described as having a number of "schools" each of which consists of a number of "departments" each made up of a number of "disciplines." The RRPM 1.6 calculates data for the units of the lowest level of aggregation, the disciplines, which are then aggregated to produce data for the next level, the departments, which are in turn aggregated to produce data for each school. A final aggregation of data for the schools produces data for the institution as a unit.

The nature of the raw data required for the implementation of the model is not affected by decisions concerning the number and definition of organizational levels to be used, since any definition requires data on individual courses. The level of organization which will be defined as the lowest level for use with the RRPM 1.6 will be decided by considerations of the stability of that level over time. An illustrative example is that although individual courses may be defined in the lowest organizational level, it is unlikely that such characteristics as class size and the teachers' relative salaries would be stable from one year to the next.

Course levels. Up to seven course levels may be defined for the institution. If the model were to be applied to either an elementary school or a high school then there would be no problems in defining the course levels--each course level would correspond to one grade. However the application of the RRPM 1.6 to a school of 12 grades requires the grouping of grade levels into a maximum of seven categories.

Student levels. A maximum of seven student levels may be defined for each program. Programs may be defined such that the number of student levels in each does not exceed seven. However the RRPM 1.6 provides for an average cost per student for each student level and across all programs. The excess of grade levels over student levels does not allow one to one correspondence between the two thus rendering meaningless the averages of cost per student across programs. This feature of the model could be used by grouping the 12 grades into a maximum of seven categories.

Instruction types. The RRPM 1.6 allows the definition of up to five instruction types. This feature permits the distinction between types of instruction which differ in characteristics affecting such unit costs as cost per student and cost per credit. An example of this type of difference is laboratory instruction with its smaller class sizes and higher direct instructional expenses than conventional classroom instruction. The effect of these differences would be a higher cost per student and cost per credit in laboratory instruction.

Faculty ranks. The maximum of six faculty ranks available is appropriate to a post-secondary institution where a hierarchy is readily identifiable and a small number of salaries make up the faculty salary schedule. In a university the six ranks may be defined as professor, associate professor, assistant professor, instructor, teaching assistant, and other. For each rank an average salary could be readily determined.

A formal hierarchy of teachers in a school is not readily identifiable but must be constructed on the basis of salary. The salary schedule for a school could be expected to consist of more steps than that for a post-secondary institution. Thus for use with the model, the salaries in a school could be represented by grouping them into a maximum of six categories. Each teacher could then be assigned a rank corresponding to the category which includes his salary.

Staff categories. The RRPM 1.6 permits the definition of titles for up to four types of non-teaching support staff assigned to teaching departments, e.g., secretary, laboratory assistant, student help.

Other expense types. Apart from salaries, a maximum of seven types of direct instructional expense may be defined. These expenses should include all types of expenditure by instructional departments, e.g., supplies, equipment, telephone, travel, printing, rentals, miscellaneous.

Titles

Titles of organizational structures must be supplied together with information on the hierarchical relationships between the organizational levels. The model displays these titles in its report.

Field of study titles. A field of study may be a degree program, vocational program, field of interest, or represented by the courses undertaken by any group of students who might logically be viewed as a homogeneous group for the purposes of analysis. The range of grade levels, which can be included in a group with a common field of study, is restricted by the upper limit of seven student levels.

Discipline titles. A title must be provided for each unit at the lowest organizational level--number 1. The organizational units of level 1 are the cost centres which become the basis for calculating the unit cost (e.g., cost per credit hour) and the average cost per student. Although the units of organizational level 1 are initially termed "disciplines" they may be renamed to conform with usage in the institution being modelled.

Department titles. Data from the disciplines may be aggregated during the preparation of reports. If such aggregation is desired titles must be supplied for each "department" together with data on the way in which disciplines are to be aggregated to form departments. Although units of organizational level 2 are termed "departments" they may be renamed.

__School titles__. Yet a third level of aggregation is available in the model for the preparation of reports. If this option is used then titles must be supplied for each "school" together with data linking units of organizational level 2, departments, to particular "schools." As with the lower organizational levels the third level may also be renamed.

__Induced Course Load Matrix (ICLM)__

Clark et al (1972:9) describes the ICLM in its simplest form as the average number of units taken by a typical student in each program, or field of study, from each discipline or department. The credit hour is the most common unit of measure (Clarke et al., 1972:10) and is the only unit considered in this study. Other units which might be used are contact hours, courses, or subjects.

__Enrolment__

The number of students enrolled in each student level of every program must be supplied to the model.

__Faculty Salary Schedule__

The salary correspondi[illegible] to each faculty rank must be supplied for each discipline. These data are used, together with the calculated number of full time equivalent (FTE) faculty of each rank, to compute the salary costs by discipline, course level, and faculty rank.

Ratio of Student Contact Hours to Student Credit Hours

This ratio establishes the relationship between the number of hours students spend in the classroom and the number of credit hours earned. If one credit were defined as forty minutes of instruction per week for the whole academic year then the rat~~io~~e of contact hours to credit hours would be 0.67.

Distribution of Student Contact Hours

The RRPM 1.6 uses the enrolment and ICLM data to calculate the total number of student contact hours which must be produced by each discipline at each course level. The proration of costs to different types of instruction requires data on the distribution of student contact hours across the different instruction types. The proportions of instruction types must be provided for each course level of every discipline.

Class Size

The average class size must be provided for each instruction type for all course levels of every discipline.

Faculty Work Load

The number of contact hours per week of the typical faculty member must be provided for each instruction type for all course levels of every discipline.

Faculty Rank Distribution

The RRPM 1.6 requires the proportion of each faculty rank teaching each instruction type at each course level of every discipline. These data are used in the proration of faculty salary costs to instruction types and course levels.

Chairman and Chairman's Salary

In terms of the RRPM 1.6, the position of department head in a school corresponds to that of a chairman in a post-secondary institution. The data required to determine department head's administrative costs, are the proportion of his time allocated to administration, and his salary. An additional datum required is the basis on which these costs are to be allocated to course levels, i.e., FTE faculty, faculty salaries, student credit hours, or a specific course level.

Number of Support Staff

The number of support staff assigned to a discipline may be input as a constant, and/or as a function of any or all of FTE faculty, credit hours, and FTE chairman. In addition the average salary for each staff category must be supplied.

"Other" Discipline Expenses

Other expenses of each instructional discipline are calculated by means of estimating equations. These expenditures may be input as a constant, and/or as a function of any or all of total FTE faculty, total support staff, FTE chairman, student credit hours, total faculty salaries, and total staff salaries. The basis for allocation of these costs to a course level must be provided, i.e., faculty salaries, FTE faculty, student credit hours, or a specific course level.

Costs of Other than General Academic Instruction

If costs of other than direct instruction can be identified with specific discipline and course level cost centres, the model can accommodate the allocation of such costs to the appropriate cost centres. These costs must be calculated external to the model.

Non-Instructional Expense Estimating Equations

The model uses a series of estimating equations to calculate the cost of organizational activities other than general academic instruction. Each cost may be input as a constant, and/or as a function of any or all of enrolment, student credit hours, FTE faculty, FTE staff, total faculty salaries, total staff salaries, and the total instructional budget. Each activity other than direct instruction may be described by the construction of a series of estimating equations.

OUTPUT DATA

Data for use in decision-making are provided by the RRPM 1.6 in the form of three types of reports. All or any of these reports may be obtained with the level of aggregation specified by the user.

The Organizational Budget

The organizational budget consists of a series of reports on the units at the different organizational levels. Each report provides line-item budgets detailing the personnel and dollar requirements for the organizational units at the level of aggregation specified. (A sample of this report format is included in Appendix 1).

Personnel data. For each faculty rank the salary, number of FTE faculty, and a total cost are reported. In addition a weighted average salary of all ranks is calculated and presented along with the total number of FTE and cost for the unit. Data are also provided on the distribution of staff and their salaries.

Other discipline expenses. The discipline expenses calculated by the model are displayed along with the appropriate titles. Other discipline expenses calculated externally to the model are listed as additional expenses.

Unit cost data. The distribution, over course levels, of the costs discussed in the previous two paragraphs, produces the unit costs. Values reported for each course level are total cost, number of credit hours produced, and cost per credit hour.

The Program Budget

The second type of report shows the budget for each program, the number of students enrolled in the program, the cost per student, and the total cost of each program.

The Institutional Summary

The institutional summary displays the

expenditures of the various institutional activities, e.g., general academic instruction, library, physical plant operation and maintenance.

SUMMARY

Following the collection of raw data on the institution a number of definitions must be decided upon, e.g., program, lowest level organizational unit, student level, and course level. Based on student data, an induced course load matrix is then calculated. To allow the model to determine numbers of FTE faculty and faculty salary costs, data are required on faculty salary, ratio of student contact hours to student credit hours, distribution of student contact hours across instruction types, class size, faculty work load, and faculty rank distribution. Additional data required are number of FTE allocated to departmental administration, the chairman's salary, the number of support staff, and other expenses and costs. Particular problems in applying the model to a school are due to the restriction of the number of both student and course levels to a maximum of seven.

Based on the data outlined above, the RRPM 1.6 calculates values for the variables of each organizational unit. These include the number of FTE of each faculty rank, the cost of faculty salaries, other expenses, the total cost of each course level, and the cost per credit hour for each course level. Values displayed for each program include total cost, cost per student, and total enrolment in the program. The third report type shows a breakdown of the expenditures for the various activities carried out by the institution.

Chapter 3

RESEARCH DESIGN

The chapter commences with an outline of the study and a discussion of the limitations and delimitations. Following this is a consideration of the criteria for selection of the school to be used in the study. Data sources and collection are then described followed by a decription of how the data were treated to produce the parameters required by the RRPM 1.6.

INTRODUCTION

This investigation was intended as a pilot study to provide information which would assist in further considerations of the appropriateness of the RRPM 1.6 as a cost analytic tool for use in schools. In this context the county office of education was not involved to any great extent. The implementation of the RRPM 1.6 as a working administrative tool requires an extensive project involving administrators at all levels.

OUTLINE OF THE STUDY

After the school had been selected, permission was obtained from the superintendent to conduct the study.

Data on the organization of the school and internal expenditures were obtained from school records and by interview with the principal, other expenditure data were obtained from the county office. The raw data were then converted to the form required by the RRPM 1.6 and the model applied to the school in a number of different ways. The reports generated were evaluated, in consultation with the principal, to select the most appropriate basis for modelling the school. Data were then obtained on enrolment projections, expenditure trends, and possible heuristic applications of the model.

Based on the agreed enrolment projections and expenditure trends, a number of reports were generated which predicted expenditures for the next eight years. The potential heuristic applications, discussed with the principal, were used as the basis for generating another set of reports predicting the effect of given parameter changes on expenditure. All reports were then discussed with the principal and the superintendent of schools, for the purpose of evaluating the applicability of the model to the school.

LIMITATIONS AND DELIMITATIONS

Contact, with the admininistrative personnel of the school district, was limited mainly to the school principal for two reasons: the cognizance by the principal of management techniques; and the preliminary nature of this study, which could not be afforded the extensive time commitment that would be required for a full scale project leading to the implementation of the model.

The accuracy with which the RRPM 1.6 simulated the school was evaluated on an objective basis. The utility of applying the model was evaluated on the basis of the opinions of those involved in its application, i.e., the school principal, the superintendent of schools, and the investigator. The justification for limiting the number of people involved in this subjective evaluation is that in view of the preliminary nature of this study, sufficient information would be available from the experiences of these people to indicate whether or not further investigation into the application of the RRPM 1.6 to schools, would be worthwhile.

SELECTION OF THE SCHOOL

The criteria for selection of an appropriate school were:

1. that the school be small enough to facilitate data collection;
2. that there be a range of grades;
3. that there be diversity in the senior high school

programs; and

4. that the school administration be cognizant of management techniques.

DATA COLLECTION

Data were obtained from both the school and the county office, the latter producing information concerning salaries and physical plant maintenance and operation costs. Student data obtained from the school showed the enrolment in each program and the courses taken by each student. Staff work load summaries obtained from the school gave the size and duration of each class taught together with any non-teaching duties.

The school accounts were organized in the traditional manner and showed expenditures, other than those on salaries and physical plant maintenance and operation, of different types for different subject areas although not the grade level generating the expenditures. This organization concealed the relationship between expenditure and programs.

DATA TREATMENT

The various concepts used in the RRPM 1.6 required definition, in terms appropriate to the school, before the parameters required by the model could be calculated from the raw data. Parameters which were calculated included class size, distribution of instruction at each course level over faculty ranks and instruction types, and the induced course load matrix. These data were available from the staff work load summaries obtained from the school.

SUMMARY

Involvement of the administrative personnel of the school district was confined largely to the principal due to the preliminary nature of the study. The raw data obtained from both school and county records and by interview with the principal were then used as a basis for four simulations. The principal was interviewed to determine which was the most appropriate simulation. Data for experimental use of the model were obtained at this same interview. After these data had been used with the model, the principal was again interviewed for the purpose of assessing the value of applying the RRPM 1.6 to a school.

The school was selected on the basis of size, grade range, diversity in senior high school programs, and cognizance by the administration of management techniques.

Data were collected by interviewing the principal and consulting school and county records. The school was then defined in terms compatible with the model and the simulation parameters derived.

Chapter 4

ANALYSIS AND FINDINGS

The conformity of the school to the selection criteria is examined. This is followed by three sections, each centred around one of the research questions posed earlier:

1. Can the RRPM 1.6 be used to model the school?
2. Can the RRPM 1.6 be used to simulate the school?
3. Is the RRPM 1.6 useful as an administrative tool?

Each section of the chapter will consist of the analysis and findings related to the particular research question being considered. A concluding summary will follow the third section.

SELECTION OF THE SCHOOL

Criteria for selection of an appropriate school were outlined in chapter 3. The school met the first criterion in that the enrolment was appropriately small, 300 students. Standard and optional academic courses were offered together with vocational courses, thus providing diversity in the programs offered at the senior high school level. The principal had obtained the degree of Master of Education, from the Department of Educational

Administration at The University of Alberta, thus meeting the criterion of cognizance by the school administration of management techniques.

CAN THE RRPM 1.6 BE USED TO MODEL A SCHOOL?

This question can best be answered by considering the input and output data separately. The input data consist of definitions of organizational units together with relationships defined from raw data. The output is in the form of the various unit costs and planning parameters calculated by the RRPM 1.6. With both input and output data there are two aspects of evaluation. The first aspect is the extent to which the concepts defined in the model represent the actual relationships in the school. The second is the accuracy with which the parameters calculated by hand from raw data agree with the variates calculated by the RRPM 1.6.

The extent to which the concepts used in the RRPM 1.6 are applicable to a school was studied by using a variety of definitions in four applications of the model. These applications provided the basis for the evaluation, by consensus of opinion in discussion with the principal, of the validity of the model. Modifications suggested during this discussion were incorporated into a final application--Base Year 1972/73--which was used as the basis for a variety of simulations.

The following sections of the chapter outline the way in which the school was modelled in each of the applications of the RRPM 1.6. Applications after the first were based on the experience gained from preceding applications. The modifications to those preceding applications are described in the sections dealing with the second, third, and fourth applications.

First Application of the RRPM 1.6

In the first application of the RRPM 1.6 the main focus was on defining the school in terms compatible with the model, and deriving the relationships and parameters needed to model the school. The object of this application was to provide a basis for subsequent, more sophisticated applications. The definition of organizational characteristics and the derivation of the necessary parameters are discussed in the following paragraphs.

Organizational levels. Twenty-four "departments" were defined (Table 1), each being a logically identifiable, coherent, organizational unit which offered instruction. These were grouped into four "divisions"--Primary, Elementary, Junior High, Senior High--depending on whether they offered courses to only

Table 1

Organizational Units Defined in the First Application of the RRPM 1.6: Titles and Relationships

- Primary Division
  - General Primary Department
  - Primary Music Department

- Elementary Division
  - General Elementary Department
  - Elementary Music Department
  - Elementary Physical Education Department

- Junior High Division
  - Junior Language Arts Department
  - Junior Social Science Department
  - Junior Science Department
  - Junior Mathematics Department
  - Junior Physical Education Department
  - Junior Home Economics Department
  - Junior Industrial Arts Department
  - Junior Music Department
  - Guidance Department

- Senior High Division
  - Senior Language Arts Department
  - Senior Social Science Department
  - Senior Science Department
  - Senior Mathematics Department
  - Senior Physical Education Department
  - Senior Home Economics Department
  - Senior Industrial Arts Department
  - Second Language Department
  - Business Education Department
  - Fine Arts Department

grades 1-3, 4-6, 7-9, or 10-12 respectively.

Course levels. Only three course levels were used of the maximum seven permitted by the RRPM 1.6. The same three course levels were defined differently for the four divisions (Table 2). Since each course level represented a different grade level in each division, any data aggregated on the basis of course levels were meaningless, e.g., course level-01 represented grades 1, 4, 7, and 10.

Student levels and programs. Only student level-01 was used as a result of the way in which programs were defined. Nine programs were defined to represent the courses taken by students in grades 1-9 respectively. A further six programs were defined to accommodate students in grades 10-12 who were categorized as either senior matriculation or high school diploma students. The titles of these fifteen programs are displayed in Table 3. The definition of fifteen programs, each with one student level, permitted the calculation of the per student cost at every grade level and even in categories within grade levels, e.g., matriculation and non-matriculation students in the senior high school. The weighted average for the one student level, over the whole institution, represented the average cost per student in the school.

Table 2

Course Levels Defined in the First Application of the RRPM 1.6: Corresponding Grade Levels.

Division	Course Level		
	1 (grade)	2 (grade)	3 (grade)
Primary	1	2	3
Elementary	4	5	6
Junior High	7	8	9
Senior High	10	11	12

Table 3

Titles of the Programs Defined in the First Application of the RRPM 1.6.

- Grade One
- Grade Two
- Grade Three
- Grade Four
- Grade Five
- Grade Six
- Grade Seven
- Grade Eight
- Grade Nine
- Grade Ten Matriculation
- Grade Eleven Matriculation
- Grade Twelve Matriculation
- Grade Ten Diploma
- Grade Eleven Diploma
- Grade Twelve Diploma

Instruction types. While cost data are not reported by instruction type the RRPM 1.6 provides for the definition of up to five types. This option was designed to distinguish between instruction types with different resource requirement characteristics, e.g., industrial arts instruction--with smaller class sizes and greater equipment expenses--may be distinguished from normal classroom instruction. In the school being studied no such distinctions were normally made. However a distinction, between classroom instruction and instruction using the gymnasium, was made in the physical education departments for the purpose of demonstrating the capabilities of the RRPM 1.6.

Faculty ranks and salaries. The RRPM 1.6 requires the categorization of the faculty in each department, on the basis of salary, into a maximum of six faculty ranks. In this application of the RRPM 1.6 the teachers in each department were ranked on the basis of salary with the highest salaried teacher being assigned a rank of one (Table 4). Data calculated using this definition were meaningful for each department but not when departmental data were aggregated to produce divisional data.

Other expense types. Six of the possible seven categories of direct instructional expenditure, allowed by

Table 4

Salaries Associated with the Faculty Ranks Defined in the First Application of the RRPM 1.6.

Department	Faculty Rank					
	1	2	3	4	5	6
	$	$	$	$	$	$
General Primary	9340	9170	9000	7750		
Primary Music	8600					
General Elementary	9000	7755				
Elementary Music	8600					
Elem. Phys. Ed.	9000	8482	7760			
Jun. Lang. Arts	12531	9569	8476	8100		
Jun. Social Sci.	16600	13100	13000	8600		
Junior Science	13000					
Junior Math	16593	8471	8100	7786		
Junior Phys. Ed.	11550	8600	8500			
Junior Home Ec.	8476					
Junior Indust. Arts	7786					
Junior Music	8600					
Guidance	11533					
Sen. Lang. Arts	12529					
Senior Social Sci.	13051					
Senior Science	13000	8471				
Senior Math	13100	12529	8100			
Senior Phys. Ed.	8478					
Senior Home Ec.	8477					
Senior Indust. Arts	7786					
Second Language	8600					
Business Education	13000	9570				
Fine Arts	13000					

the RRPM 1.6 in addition to salaries, were defined to correspond to the line-items used in the school accounts, i.e., supplies, school equipment, capital equipment, library and reference books, text- and work-books, and educational media. These expenditures were not listed by department or course level or student level, consequently a series of arbitrary decisions were necessary to apportion them in this way. The resulting calculated data were not representative of the pattern of expenditures in these categories but served to demonstrate that the RRPM 1.6 was able to represent data available from appropriate cost-accounting procedures.

Induced course load matrix (ICLM). The average credit hour load, generated by the students of each course level of every program, was calculated from the student data. While student data did not distinguish between matriculation and non-matriculation students at the senior high school level, the distinction was made in this application of the RRPM 1.6 to demonstrate the flexibility of the model in accommodating changes in administrative practice. An example of the data calculated for the ICLM is that, on the average, grade four students took 31.6 credits from the General Elementary Department, 2.00 credits from the Elementary Music Department, and 3.75

credits from the Elementary Physical Education Department (all credits being taken at course level-01).

Contact/credit hour ratio. The student credit hour is the unit for costing instruction by department. The relationship between a student credit hour and a student contact hour is a required input to the model. A credit hour was defined as forty minutes of instruction per week for the academic year, data applying to one semester only being apportioned over the two semesters making up the academic year. This was modified to accommodate a variation arising from the semestering of 3-credit courses, where three credits were given for the equivalent of one hundred minutes of instruction per week spread over two semesters. The general ratio used was 0.67, while for the special case of 3-credit courses offered over one semester the ratio used was 0.55. The use of the two ratios was intended to demonstrate that a student credit hour could be defined differently for different departments or course levels.

Proportions of different instruction types. The credit hour load calculated for each department at each course level is not differentiated by instruction type. Consequently the proportions of the instruction types offered by each department were calculated from raw data.

Class size. The class size data were obtained directly from the staff work load summaries. The average class size was calculated for each course level of every department.

Faculty work load and distribution. The policy of the school was that the staff work load should be 1400 minutes per week, except for the physical education teacher who received some reduction in lieu of time, outside school hours, given to coaching sporting teams. Staff work load summaries provided data for the calculation of the proportions of the various faculty ranks teaching each instruction type at all course levels in every department.

Costs of other than general academic instruction. The model has a facility which permits the allocation, to departments, of expenses which are not included in expenditures generated by general academic instruction. This facility was used to allocate expenditures, of special grants, by the Home Economics and Industrial Arts Departments.

Non-instructional expenses. Five non-instructional activities were defined, viz., Academic Support, General Administrative Services, Institutional Support, Student Services, and Physical Plant Maintenance and Operation. Each of these were described by one or more estimating equations (Appendix 3). The expenditures were entered as constants since they could not be expressed as coefficients related to enrolment, number of teachers, number of credit hours produced, salaries, or the instructional budget.

The definition of non-instructional activities was loosely based on the NCHEMS Program Classification Structure (Gulko, 1970). The titles of the activities and equations are displayed in Appendix 3. Academic support was restricted to the library and only salary expenses were included. Expenditure for library stock was allocated to the instructional departments and thus not included as a non-instructional expense. Student services expenditure was restricted to that proportion of the salary of the counsellor which corresponded to the proportion of his time which was allocated to counselling and career guidance. Institutional support consisted of the executive management function of the principal, the identifiable expense being the appropriate proportion of the principal's salary. General administrative services were provided by two clerical assistants, one of whom provided support for the school administration while the other provided clerical assistance to the instructional staff. Thus, expenses consisted of the salaries of the two clerical assistants. Physical plant maintenance and operation costs were made up of the salaries of the three caretakers, the cost of utilities, expenditure on the caretaker's supplies, and the costs of maintaining buildings and grounds.

Second Application of the RRPM 1.6

The second application of the RRPM 1.6 was derived from the first by providing a third instruction type and ranking salaries over the whole school rather than within each department. The third instruction type--Special Project--was defined for the purpose of accommodating supervised project work, for some senior high school students, to which no resources were formally allocated but for which credits were earned.

Six salary categories were selected by inspection of staff salaries--greater than $16000, $16000-13000, $12999-11000, $10999-9000, $8999-8000, and less than $8000--representing faculty ranks 1-6 respectively. In establishing the salary schedule for each department an average salary, weighted on the basis of the number of FTE, was calculated for each faculty rank (Table 5). The anticipated advantage of this modification was that data aggregated on the basis of faculty ranks would be

Table 5

Salaries Associated with the Faculty Ranks Defined in the Second Application of the RRPM 1.6.

Department	Faculty Rank 1 $	 2 $	 3 $	 4 $	 5 $	 6 $
General Primary				9058		7750
Primary Music					8600	
General Elementary				9000		7755
Elementary Music					8600	
Elem. Phys. Ed.				9000	8518	7760
Jun. Lang. Arts			12531	9569	8288	
Jun. Social Sci.	16591	13051			8600	
Junior Science		13000				
Junior Math	16591				8286	7786
Junior Phys. Ed.			11550		8514	
Junior Home Ec.					8476	
Junior Indust. Arts						7786
Junior Music					8600	
Guidance			11533			
Sen. Lang. Arts			12529			
Senior Social Sci.		13051				
Senior Science		13000			8471	
Senior Math		13100	12529		8100	
Senior Phys. Ed.					8478	
Senior Home Ec.					8478	
Senior Indust. Arts						7786
Second Language					8600	
Business Education		13000		9570		
Fine Arts		13000				

meaningful.

Third Application of the RRPM 1.6

The third application of the RRPM 1.6 varied from the second in that programs and course levels were redefined, with a consequent redefinition of student levels. The redefinition of programs involved grouping the fifteen programs of the previous applications into five, on the basis of grade levels. Grade One, Grade Two, and Grade Three programs became student levels 1-3 of the Primary program; Grade Four , Grade Five , and Grade Six became student levels 4-6 of the Elementary program; Grade Seven, Grade Eight, and Grade Nine programs became student levels 1-3 of the Junior High program. Matriculation students in grades 10-12 were represented by student levels 4-6 of the Senior Matriculation program while the non-matriculation students in the same grades were represented by student levels 4-6 of the High School Diploma program. Recalculation of parameters was not necessitated by this modification although the induced course load matrix data were reorganized.

Course levels were redefined--as Primary, Elementary, Junior High, Grade Ten, Grade Eleven, and Grade Twelve--for the purpose of providing consistency among departments. An advantage of this consistency was that data aggregated across departments were meaningful. A disadvantage of using six course levels was that cost per credit hour data were not available for individual grade levels, except in the senior high school.

Fourth Application of the RRPM 1.6

The only modification to the third application was to define a third level of organization. The twenty-four departments of the previous applications were termed "sub-departments" and grouped to form fourteen "departments." These departments were linked to form two "divisions"--Junior and Senior--on the basis of grades taught, i.e., grades 1-6 and 7-9 respectively (Table 6). The purpose of this modification was to test the facility of the RRPM 1.6 to simulate changes in organizational structure.

Final Application of the RRPM1.6

In consultation with the principal the third application of the RRPM 1.6 was selected as the most appropriate model of the school. The criteria used in selection were: that cost per student data should be available for all grade levels; and that data produced by aggregation of lower organizational levels should be meaningful. This latter criterion originated in the belief that, for time-series predictions, aggregated data

Table 6

Organizational Units Defined in the Fourth Application of the RRPM 1.6: Titles and Relationships.

JUNIOR DIVISION

- Primary Department
  - General Primary Sub-Department
  - Primary Music Sub-Department
- Elementary Department
  - General Elementary Sub-Department
  - Elementary Music Sub-Department
  - Elementary Physical Education Sub-Department

SENIOR DIVISION

- Language Arts Department
  - Junior Language Arts Sub-Department
  - Senior Language Arts Sub-Department
- Social Science Department
  - Junior Social Science Sub-Department
  - Senior Social Science Sub-Department
- Science Department
  - Junior Science Sub-Department
  - Senior Science Sub-Department
- Mathematics Department
  - Junior Mathematics Sub-Department
  - Senior Mathematics Sub-Department
- Physical Education Department
  - Junior Physical Education Sub-Department
  - Senior Physical Education Sub-Department
- Industrial Arts Department
  - Junior Industrial Arts Sub-Department
  - Senior Industrial Arts Sub-Department
- Music Department
  - Junior Music Sub-Department
- Guidance Department
  - Guidance Sub-Department
- Business Education Department
  - Business Education Sub-Department
- Fine Arts Department
  - Fine Arts Sub-Department

were more useful than data, on lower organizational levels, which could not be aggregated meaningfully.

Three modifications, to the third application of the RRPM 1.6, were suggested during the interview for use in developing the final application. These modifications were related to "other" instructional expenses, a third organizational level, and the naming of the student levels. The six student levels were named Grades 1 and 7, Grades 2 and 8, Grades 3 and 9, Grades 4 and 10, Grades 5 and 11, and Grades 6 and 12, respectively. This procedure did not require redefinition or the calculation of new parameters.

A third organizational level was defined by linking the Primary and Elementary divisions, to form the "Junior School," and the Junior and Senior High divisions, to form the "Senior School." No recalculation of parameters was required to effect this change since all that was added was a further stage of aggregation.

The principal was not satisfied with the representation of "other" instructional expenses due to the arbitrary nature of the proration decisions involved. Since an appropriate cost-accounting system was not in operation in the school the principal felt that the use of the county grant allocation formula would be a more realistic and useful approach. The variables calculated by the RRPM 1.6 would then represent a budget based on the county's allocation formula, rather than the actual pattern of expenditure. The county grant allocation formula provided per-pupil grants in three categories, i.e., instructional materials, permanent equipment, and book repair. These grants were apportioned, to course levels in departments, on the basis of the credit hour load generated by the average student as represented by the induced course load matrix. A fourth category of "other" instructional expenditure--Grasslands--was defined to represent the costs of providing instruction, in industrial arts and home economics, to students from another school.

Output Data

The data calculated by the RRPM 1.6 are available in three report formats. An "Organizational Budget" is available for each organizational unit defined, a "Program Budget" is available for each program, and an "Institutional Summary" provides a summary of both the instructional and non-instructional expenditures of the organization. The data available in each type of report are considered in the remainder of this section along with the extent to which those data validly and accurately represent reality.

The organizational budget. The organizational budget report displays cost data for faculty, other expenses, and course levels. Faculty data include the weighted average salary and number of full-time equivalent (FTE), together with the total cost, for each faculty rank. The number of FTE of each faculty rank is also expressed as a percentage of the total number of FTE. The costs associated with each faculty rank are expressed as percentages of the total instructional expenditures of both the organizational unit and the whole institution. Total costs are reported, for each of the expense types defined, in addition to expenses of other than general academic instruction. These totals are also expressed as percentages of the organizational unit and institutional budgets. Data for each course level include: total cost, number of student credit hours produced, cost per credit hour, number of FTE faculty, and average number of credit hours produced per faculty member (productivity ratio). Total cost, credit hours produced, and number of FTE faculty are also reported as percentages of the organizational unit totals for each course level. In addition, the number of credit hours is expressed as a percentage of the total number of credit hours produced in the school. The provision of percentage figures facilitates comparison of the relative weights of the various costs in determining total expenditure.

The definition of the variables for which data are reported was discussed in the preceding section--Input Data. In the opinion of the superintendent, all the organizational budget data were useful in decision-making at the county level. The principal considered unit cost data computed for course levels to be too gross for short term planning at the school level since details for individual courses were more relevant. However the principal conceded that in the long term, any data calculated for individual courses were too unstable to be useable and that less detailed data would be more appropriate.

The accuracy, with which the RRPM 1.6 simulated the school, was evaluated by comparing values estimated by the RRPM 1.6 with values calculated from raw data. Variables compared in this way were: number of FTE faculty, total cost of salaries associated directly with instruction, and the total of other expenditures on instruction. The difference between the actual and predicted number of FTE of each faculty rank does not exceed 0.10 for any one salary rank, 0.15 for any division total, and is 0.06 for the whole school (Table 7). The total expenditures on salaries directly associated with instruction were $151,447 and $151,050--based on raw data

Table 7

Comparison of Estimates of FTE Faculty with Actual Numbers

Organizational Unit	Faculty Rank	Number of FTE		
		Actual (1)	RRPM (2)	Difference (1) - (2)
Primary Division	4	2.06	2.09	-0.03
	5	.18	.17	0.01
	6	1.00	.90	0.10
		3.24	3.16	0.08
Elementary Division	4	.90	.86	0.04
	5	.36	.34	0.02
	6	1.89	1.98	-0.09
		3.15	3.18	-0.03
Junior High Division	1	.17	.18	-0.01
	2	1.38	1.42	-0.04
	3	.44	.47	-0.03
	4	.29	.29	0.00
	5	1.58	1.65	-0.07
	6	.63	.63	0.00
		4.49	4.64	-0.15
Senior High Division	2	1.55	1.56	-0.01
	3	.71	.72	-0.01
	4	.37	.37	0.00
	5	1.63	1.63	0.00
	6	.29	.29	0.00
		4.55	4.57	-0.02
All Organizational Levels	1	.17	.18	-0.01
	2	3.00	2.98	0.02
	3	1.16	1.19	-0.03
	4	3.66	3.61	0.05
	5	3.71	3.79	-0.08
	6	3.91	3.86	0.05
		15.61	15.55	0.06

and calculated by the RRPM 1.6 respectively--the difference being 0.3% of the actual value. The maximum difference between actual and predicted instructional expenditures, other than salaries, does not exceed 2.0%, of the actual amount, for any category (Table 8).

Table 8

Comparison of Predicted and Actual Instructional Expenditures Other Than Salaries

Expenditure Category	Actual $	Predicted $	Differences[1] $	%
Instructional Materials	9254	9241	13	0.14
Permanent Equipment	1292	1318	26	2.01
Book Repair	161	160	1	0.62
Other Instruction	1627	1639	12	0.74
Total	12334	12358	24	0.19

[1] Percentage differences are expressed in relation to the actual value.

The program budget. For each student level of every program, the program budget (Appendix 2) reports the cost per student and number of students, together with weighted averages or totals. The number of students is also expressed as a percentage of both the number in the program and the total number in the school. The total cost of each student level and of the program are listed as both dollar values and percentages of both the program and total instructional budgets.

A summary for the institution as a whole contains the same information as is reported for each program. The definition of a student level to represent two grade levels, as described when considering the final application of the model earlier in this chapter, renders this summary largely meaningless.

Both the principal and superintendent agreed that cost per student data were an important input to administrative decision-making although more so at the county level than in the school. The accuracy of per pupil estimates could not be verified against actual data since no alternative source was available.

The institutional summary. The institutional summary (Appendix 3) reports summary costs for both the instructional and non-instructional activities of the school. The data for the instructional program are calculated from the input data described earlier. Each of the other activities was described by a series of user supplied estimating equations. The cost calculated by each equation is shown together with the way in which that cost was related to the various organizational parameters. In this study the actual expenditures were entered as constant amounts, thus describing the expenditures of non-instructional activities with a high degree of accuracy, i.e., 0.0% error. However the facility is available for a more sophisticated approach to predicting non-instructional expenditures, i.e., by relating these expenditures to the institutional parameters available in the model.

CAN THE RRPM 1.6 BE USED TO SIMULATE A SCHOOL?

The model can accept changes in the form of new parameters calculated by the user. Since any of the parameters used in modelling the school may be changed, the model was able to accommodate any changes which could be described in terms of the concepts used in applying the RRPM 1.6 initially. Alternatively the implicit mathematical relationships between parameters and variables may be used.

The extent to which any simulation is accurate depends on the degree to which the implicit relationships represent those in the school. The facility to make blanket parameter changes is provided for student enrolment, faculty salaries, credit to contact hour ratio, class size, and faculty work load. These changes must be entered as positive or negative percentages for the appropriate organizational units and levels.

The use of the model to predict future resource requirements assumes a degree of stability in the organization. The question arises as to which level of aggregation is sufficiently stable to provide an appropriate base for prediction yet supply information which will be useful in decision-making. Although data on each course are required, the RRPM 1.6 reports data by course level only. The implicit assumption is that the relationships between parameters and variables is more likely to be stable over time at the higher level of aggregation. Questions of stability can only be answered after the event whether historical data are used, or predictions are verified as time progresses. Even the use of these approaches does not guarantee that predictions will not be rendered inaccurate by unpredictable changes in the organization or its environment. Thus evaluation of the accuracy with which the RRPM 1.6 can be used to simulate the school must focus on the extent to which the model represents the parameters and relationships involved in the changes.

Major concepts and associated parameters assumed to be stable over time are: the induced course load matrix; the distribution of the instructional load, at each course level, over faculty ranks and instruction types; the definitions of organizational units; and the estimating equations for both instructional and non-instructional expenses. While the possibility exists of altering those concepts to reflect basic changes in the organization, the model is most useful where they are stable. Information can then be readily obtained for parameters which commonly vary over time, e.g., enrolment, salaries, and class size.

Using the 1972/73 data as a base, annual expenditures were predicted to 1980/81 inclusive. Initially these predictions were based on the following changes: a salary increase of 7% per annum; and non-instructional expenditure increase of 5% per annum to allow for rising prices. Enrolments were projected on the basis of a zero attrition rate, an enrolment of 20 grade one students in 1973/74, and subsequent grade one enrolments arbitrarily set at 15 or 20 alternately. The initial report for 1972/73 predicted the need for 14.79 FTE faculty, a decrease of 0.76, for a reduction in enrolment of 11. Such a small change in enrolment is in reality unlikely to affect the number of FTE required. Thus a second prediction was made using the same assumptions as the first together with an adjustment in the average class size at each course level, by a percentage corresponding to the percentage change in enrolments, in the program generating most of the load on that course level. On this basis 15.22 FTE faculty were predicted, a decrease of 0.33, which was closer to the 1972/73 prediction and the number anticipated by the principal.

The relationship between enrolments and the number of FTE faculty, was not represented accurately by the RRPM 1.6. The model calculates the number of FTE faculty by using the number of credit hours which must be produced to meet student demands, as calculated on the basis of the induced course load matrix. Thus the changes in the number of credit hours demanded, result in a corresponding change in the number of FTE faculty to meet that demand. In reality, the number of FTE faculty will only change where there is a change in the number of classes, rather than in the number of students. The effects of this unrealistic representation can be reduced , to a limited extent, by changing the class sizes to reflect the effects of enrolment changes.

A number of changes were simulated to demonstrate the capabilities of the RRPM 1.6. The accuracy of these simulations could not be checked against actual data since no alternative sources existed. However in each case the predicted changes in variables were justifiable as logical consequences of the parameter changes. In addition, the magnitude of each change was subjectively assessed, in consultation with the principal, to determine the extent to which it was intuitively reasonable.

In the first case salaries were increased by 10% and non-instructional expenses by 6% to provide a comparison with the prediction for 1973/74--changes of 7% and 5% respectively. Faculty work load was increased and decreased by forty minutes per day in the next two cases based on 1972/73 data. Five cases were then set up to predict the effects of a general increase in enrolments of 10%, 20%, 30%, 40%, and 50%. In an attempt to represent these changes more realistically class sizes were increased by the same percentage as enrolments to a maximum of 20%. The situation in which all students in a program might be required to take certain core courses was simulated by changing the induced course load matrix (ICLM) so that all matriculation students took five credits of instruction in the French language, at an appropriate level. A final example of the use of the RRPM 1.6 was in the addition of a new program. A new program--Technical Diploma--was postulated at the senior high school level with an hypothetical enrolment and ICLM. These cases were considered by the principal to be a representative sample of the types of alternatives which are assessed in the planning process.

IS THE RRPM 1.6 USEFUL?

The forty-five minute discussion with the superintendent was not long enough for him to gain any real understanding of the RRPM 1.6. However focussing discussion on the nature of the output data enabled the superintendent to comment on the relevance of these data to planning at the county level. In his opinion the types of data reported by the RRPM 1.6 were highly relevant to planning at the county level provided that comparative data were available from other jurisdictions. This proviso was based on his belief that school district budgets were evaluated, by provincial authorities, on the basis of interdistrict comparisons.

In the opinion of the school principal the RRPM 1.6 would be more useful in planning at the school level if it provided information on individual courses. In addition he believed that the data available from the RRPM 1.6 could have been obtained directly from raw data with not much more effort than was required to derive the parameters required by the model. He was, however, prepared to concede that this was a property of the small size of his school and that in larger schools the RRPM 1.6 would be of value. The principal also expressed the opinion that the use of the RRPM 1.6 to predict future expenditures was appropriate even to small schools.

SUMMARY

The selection of the school to be used in this study was based on four criteria related to school size, range of grade levels, diversity in senior high school programs, and school administration cognizance of management techniques.

Two approaches were used in the analysis of data for each of the three research questions: the extent to which the concepts used in the RRPM 1.6 could be used to represent the school, i.e., the validity of the model; and the accuracy of predictions in comparison with actual values of variables. In considering the extent to which the RRPM 1.6 could be used to model the school the various applications of the concepts used in the model were discussed then evaluated. The variates calculated by the model were compared with the actual values, calculated by hand from raw data, for the purpose of evaluating the accuracy with which the model simulated the school.

The ability of the model to simulate changes in the school depended partly on the answer to the first research question but was also heavily dependent on the stability of the organizational structure. Two types of simulation were studied: the prediction of expenditures over time; and the prediction of expenditures for given changes in parameters.

Data related to the question of the usefulness of the RRPM 1.6 consisted of the opinions of the principal and superintendent as expressed in interviews.

Chapter 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH

This concluding chapter provides a brief summary of the preceding chapters together with a statement of the conclusions drawn in relation to the three research questions. Following this is a statement of the implications of these conclusions, for use of the RRPM 1.6 in schools, then some suggestions for further research into the use of the RRPM 1.6 in modelling and simulating cost/resource allocation in schools.

SUMMARY

This investigation originated in the belief that the RRPM 1.6 was sufficiently flexible to model and simulate a school. This belief was based on experiences gained in applying the RRPM 1.3 to a community college. An additional factor was the need for a cost/resource model to overcome the problems of resource allocation in schools.

The school used in the investigation, met the selection criteria in that enrolments were small, there was a range of grades, senior high school programs were diverse, and the school administration was cognizant of management techniques.

Data were collected by interview with the principal and from both county and school records. The raw data were used to determine whether the RRPM 1.6 could be used to model the school, and as a base for the calculation of parameters used in simulation of the school for the purpose of assessing the validity of the model.

Evaluation of the RRPM 1.6 centred around the three research questions. The validity, with which the RRPM 1.6 modelled the school, was analysed by applying the model in five different ways, using data from the current operating budget as a base for the derivation of the relationships supplied to the RRPM 1.6. The validity of the model was assessed by simulating the current operating year, 1972-73, then comparing variates calculated by the RRPM 1.6 with those derived from raw data. The accuracy of a number of other simulations was inferred from their intuitive reasonableness, since alternate sources of the same data were not available.

CONCLUSIONS

The concepts used in the RRPM 1.6 were able to model the school, e.g., credit hour, induced course load matrix, instruction types, faculty ranks, and instructional and non-instructional expense estimating equations. Some concepts, such as course level and student level, could not be modelled exactly, since some grouping was necessary to fit the twelve grade levels to the seven levels provided by the model. Many of these concepts were used in part only, due either to current administrative practice or lack of suitable data sources. The mathematical relationships within the school could be modelled, with the exception of that between enrolments and FTE faculty.

No alternative sources were available to permit objective comparisons between predicted and actual data. Thus accuracy of simulation was estimated by the closeness of fit of the model, i.e., simulations of changes were only as accurate as the model was valid. Consequently, simulations were inaccurate due to poor representation of the relationship between enrolments and FTE faculty, even though some compensation was possible by adjusting class sizes.

Other weaknesses of the RRPM 1.6 were due to limitations imposed by the designing of the model for post-secondary institutions. The limitation of both student and course levels, to a maximum of seven, reduced the detail in which the school was be represented by the RRPM 1.6. This same limitation rendered meaningless, some of the aggregated data.

The data, reported by the RRPM 1.6, were of limited use at the school level, i.e., heuristic applications and long term predictions for higher organizational levels. The value of both these applications was influenced by the modelling defects discussed in the preceding paragraphs. The RRPM 1.6 was potentially more useful at the county level due to the greater accuracy of simulation which was achieved when data were reported for the school as a whole. This was reinforced by the greater usefulness, at the county level, of both the type of data provided and the level of aggregation. Yet another factor supporting the value of the RRPM 1.6 at the county level, was that the major resource allocation decisions were made at that level. The inference of the above discussion is that the RRPM 1.6, as an administrative tool, is more likely to be useful at the county level rather than in the school. This usefulness was reduced by the uncertainty of prediction resulting from the poor representation of the relationship between enrolments and FTE faculty.

IMPLICATIONS

One implication of the above conclusion, is that the RRPM 1.6 should only be considered, for application to a school, where aggregated data are required for planning decisions at the county level. Such considerations should include an evaluation of the extent to which the divergence, between predicted and actual values of expenditures and planning parameters, is acceptable. Additional account should be taken of the potential for error in the poor representation of the relationships between some variables.

Another implication, arising from this investigation, is that the types of information reported by the RRPM 1.6 are of value in planning decisions at both the school and school district levels. This, together with the acknowledged usefulness of simulations of the school, strongly supports the value of a cost/resource allocation model at both levels. Such a model needs to be more representative of the mathematical relationships, and to facilitate more accurate representation of the organizational structure of the school by having fewer restrictions than the RRPM 1.6.

SUGGESTIONS FOR FURTHER RESEARCH

The value of the types of data reported by the RRPM 1.6, at both school and county level suggested that research, designed to overcome the weaknesses of the model, is worthwhile. Desirable modifications are:

1. an increase in the maximum number of student and

course levels to at least twelve;

2. the relating of changes in FTE faculty to changes in the number of classes, rather than changes in enrolments; and

3. the provision of unit cost data and planning parameters for individual courses, rather than for course levels.

Two capabilities of the model were not used in this investigation, i.e., the facility to allocate expenditure associated with a department head who carries out both teaching and administrative duties; and the ability to prorate expenses generated by non-teaching support staff who are assigned to instructional departments. Both these capabilities could be studied by applying the RRPM 1.6 to a larger school which has these types of personnel.

Conclusions on the appropriateness of the RRPM 1.6, at the system level, were based on the advantage of comparable information being available were the RRPM 1.6 to be applied to all schools in the jurisdiction. Research into the applicability of the model to the system, as an organizational unit, would be worthwhile.

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APPENDIX 1

SAMPLE ORGANIZATIONAL BUDGET REPORT

```
ITER = (01)  BASE 1972/73            A   S M A L L   A L B E R T A   S C H O O L                              01/05/73
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL                      1.6-(06) PAGE   32

*****************************************************     *****************************************************
*                                                   *     *                                                   *
*     O R G A N I Z A T I O N A L   B U D G E T     *     *         *** ALL ORGANIZATIONAL LEVELS ***         *
*                                                   *     *                                                   *
*****************************************************     *****************************************************

                                                                                 PERCENT OF        PERCENT OF
                             SALARY      FULL TIME                              ORGANIZATIONAL    INSTRUCTIONAL
                              RATE       EQUIVALENT      PERCENT          COSTS     BUDGET           BUDGET
CHAIRMAN

FACULTY (BY RANK)
  (01)  FACULTY RANK--01     16,594            .18          1.16          2,987       1.82          1.8169
  (02)  FACULTY RANK--02     13,029           2.98         19.16         38,827      23.62         23.6177
  (03)  FACULTY RANK--03     12,379           1.19          7.65         14,731       8.96          8.9606
  (04)  FACULTY RANK--04      9,153           3.61         23.22         33,044      20.10         20.1000
  (05)  FACULTY RANK--05      8,435           3.79         24.37         31,968      19.45         19.4455
  (06)  FACULTY RANK--06      7,761           3.80         24.44         29,493      17.94         17.9400
                            -------    -----------       -------    -----------    -------       ---------
  (**)  FACULTY TOTALS        9,714          15.55        100.00        151,050      91.88         91.8807
                            =======                      =======
STAFF (BY CATEGORY)
                            -------    -----------       -------    -----------    -------       ---------
                            =======                      =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                   9,241       5.62          5.6211
  (PE)  PERMANENT EQUIPT                                                  1,318        .80           .8017
  (BR)  BOOK REPAIR                                                         150        .09           .0912
  (GL)    GRASSLANDS                                                      1,639       1.00           .9970
                                                                    -----------    -------       ---------
  (**)  EXPENSE TOTALS                                                   12,348       7.51          7.5110

ADDITIONAL EXPENSES                                                       1,000        .61           .6083
                                       -----------                  -----------    -------       ---------
        ***  TOTALS  ***                     15.55                      164,398     100.00        100.0000
                                       ===========                  ===========    =======       =========

                                          PER-       HOURS      PER-  PERCENT      UNIT         FTE     PER-    PRODUCT.
COSTS BY COURSE LEVEL             COST    CENT     PRODUCED     CENT  TOT HRS      COST       FACULTY   CENT     RATIO

  (PR)    PRIMARY               29,468   17.92        2,522    18.94    18.94     11.68         3.16   20.32      798.10
  (EL)   ELEMENTARY             28,533   17.36        3,094    23.24    23.24      9.22         3.18   20.45      972.96
  (JH)   JUNIOR HIGH            53,934   32.81        4,764    35.78    35.78     11.32         4.64   29.84    1,026.72
  (TN)    GRADE TEN             20,420   12.42        1,302     9.78     9.78     15.68         1.78   11.45      731.46
  (EV)   GRADE ELEVEN           19,042   11.58          905     6.80     6.80     21.04         1.66   10.69      545.18
  (TW)   GRADE TWELVE           13,001    7.91          729     5.47     5.47     17.83         1.13    7.27      645.13
                           ----------- -------  -----------  -------  -------  --------   ---------- -------  ----------
  (**)  CRSE LVL TOTALS        164,398  100.00       13,316   100.00   100.00     12.35        15.55  100.00      856.33
                           =========== =======  ===========  =======  =======  ========   ========== =======  ==========
```

APPENDIX 2

SAMPLE PROGRAM BUDGET REPORT

```
ITER = (01)  BASE 1972/73          A  S M A L L  A L B E R T A  S C H O O L                                        01/05/73
BASE = (**)                          RESOURCE REQUIREMENTS PREDICTION MODEL                              1.6-(06) PAGE   33

**************************************************               ***************************************************
*                                                *               *                                                 *
*          P R O G R A M   B U D G E T           *               *        C O S T   P E R   S T U D E N T          *
*                                                *               *                                                 *
**************************************************               ***************************************************

INSTRUCTIONAL PROGRAM (BY STUDENT LEVEL)                         PERCENT   PERCENT                    PERCENT   PERCENT
                                      COST PER    NUMBER OF      PROGRAM    TOTAL          PROGRAM    PROGRAM   INSTR
                                      STUDENT      STUDENTS     STUDENTS  STUDENTS          COST      BUDGET    BUDGET
(0001)      PRIMARY
        (01)  GRADE 1 OR 7             438.17        21.00        31.34      6.50         9,201.57     31.23      5.60
        (02)  GRADE 2 OR 8             444.01        12.00        17.91      3.72         5,328.12     18.08      3.24
        (03)  GRADE 3 OR 9             439.34        34.00        50.75     10.53        14,937.56     50.69      9.09
                                   ----------- -----------    -------   -------  ----------------   -------   -------
        (**)  WTD. AVG./TOTALS         439.81        67.00       100.00     20.74        29,467.25    100.00     17.92
                                                                =======                              =======

(0002)     ELEMENTARY
        (04)  GRADE 4 OR 10            344.48        25.00        30.12      7.74         8,612.00     30.19      5.24
        (05)  GRADE 5 OR 11            342.64        30.00        36.14      9.29        10,279.20     36.03      6.25
        (06)  GRADE 6 OR 12            344.17        28.00        33.73      8.67         9,636.76     33.78      5.96
                                   ----------- -----------    -------   -------  ----------------   -------   -------
        (**)  WTD. AVG./TOTALS         343.71        83.00       100.00     25.70        28,527.96    100.00     17.35
                                                                =======                              =======

(0003)     JUNIOR HIGH
        (01)  GRADE 1 OR 7             692.58        43.00        47.25     13.31        29,780.94     55.26     18.12
        (02)  GRADE 2 OR 8             526.67        27.00        29.67      8.36        14,220.09     26.39      8.65
        (03)  GRADE 3 OR 9             470.89        21.00        23.08      6.50         9,888.69     18.35      6.02
                                   ----------- -----------    -------   -------  ----------------   -------   -------
        (**)  WTD. AVG./TOTALS         592.19        91.00       100.00     28.17        53,889.72    100.00     32.78
                                                                =======                              =======

(0004)    SENIOR MATRIC
        (04)  GRADE 4 OR 10            592.22        17.00        35.42      5.26        10,067.74     31.72      6.12
        (05)  GRADE 5 OR 11            785.51        14.00        29.17      4.33        10,997.14     34.65      6.69
        (06)  GRADE 6 OR 12            627.80        17.00        35.42      5.26        10,672.60     33.63      6.49
                                   ----------- -----------    -------   -------  ----------------   -------   -------
        (**)  WTD. AVG./TOTALS         661.20        48.00       100.00     14.86        31,737.48    100.00     19.31
                                                                =======                              =======

(0005)  H SCHOOL DIPLOMA
        (04)  GRADE 4 OR 10            526.16        15.00        44.12      4.64         7,892.40     38.30      4.80
        (05)  GRADE 5 OR 11            724.99         5.00        14.71      1.55         3,624.95     17.59      2.20
        (06)  GRADE 6 OR 12            649.41        14.00        41.18      4.33         9,091.74     44.12      5.53
                                   ----------- -----------    -------   -------  ----------------   -------   -------
        (**)  WTD. AVG./TOTALS         606.15        34.00       100.00     10.53        20,609.09    100.00     12.54
                                                                =======                              =======
ITER = (01)  RASE 1972/73            A   S M A L L   A L B E R T A   S C H O O L                                   01/05/73
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL                            1.6-(06) PAGE    34

*************************************************************         *************************************************************
*                                                           *         *                                                           *
*              P R O G R A M   B U D G E T                  *         *              C O S T   P E R   S T U D E N T              *
*                                                           *         *                                                           *
*************************************************************         *************************************************************

INSTRUCTIONAL PROGRAM (BY STUDENT LEVEL)                                PERCENT   PERCENT                             PERCENT    PERCENT
                                                  COST PER    NUMBER OF   PROGRAM    TOTAL                 PROGRAM      PROGRAM    INSTR
                                                  STUDENT     STUDENTS   STUDENTS  STUDENTS                  COST       BUDGET     BUDGET

   (****)  INSTITUTIONAL SUMMARY
           (01)  GRADE 1 OR 7                      609.10        64.00               19.81             38,982.51                   23.71
           (02)  GRADE 2 OR 8                      501.24        39.00               12.07             19,548.21                   11.89
           (03)  GRADE 3 OR 9                      451.39        55.00               17.03             24,826.25                   15.10
           (04)  GRADE 4 OR 10                     466.18        57.00               17.65             26,572.14                   16.16
           (05)  GRADE 5 OR 11                     508.19        49.00               15.17             24,901.29                   15.15
           (06)  GRADE 6 OR 12                     498.32        59.00               18.27             29,401.10                   17.88
                                               ----------- -----------            -------  -----------------              -------
           (**)  WTD. AVG./TOTALS                  508.46       323.00              100.00            164,231.50                   99.90
                                               =========== ===========            =======  =================              =======
```

APPENDIX 3

SAMPLE INSTITUTIONAL SUMMARY REPORT

```
ITER = (01)  BASE 1972/73            A   S M A L L   A L B E R T A   S C H O O L                                  01/05/73
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL                          1.6-(06) PAGE   35

**************************************************          **************************************************
*                                                *          *                                                *
*     I N S T I T U T I O N A L   S U M M A R Y  *          *              A C T I V I T Y   C O S T S       *
*                                                *          *                                                *
**************************************************          **************************************************

                                                 ------------------ ESTIMATING EQUATION COEFFICIENTS ------------------
      ACTIVITY NAME          ACTIVITY COST          CONSTANT    ENROLL.    FACULTY     STAFF    HOURS  FAC-$ STAFF-$ BUDGET

  1.00 INSTRUCTION PGM
     1.10 GENERAL ACADEMIC_________164,398           164,398
                              ----------------
           SUB-TOTAL               164,398

 40.00 ACADEMIC SUPPORT
    40.10 LIBRARY SALARIES___________5,314             5,314
                              ----------------
           SUB-TOTAL                 5,314

 50.00 STUDENT SERVICES
    50.30 COUNSEL. + GUID.___________5,304             5,304
                              ----------------
           SUB-TOTAL                 5,304

 60.00 INSTIT. SUPPORT
    60.10 EXEC. MANAGEMENT__________14,102            14,102
                              ----------------
           SUB-TOTAL                14,102

 63.00 GEN ADMIN SERV
    63.10 ADMIN CLER ASSIS           3,334             3,334
    63.20 INSTR CLER ASSIS           2,552             2,552
                              ----------------
           SUB-TOTAL                 5,886

 65.00 PHYS PLANT +OPER
    65.10 SALARIES                  15,785            15,785
    65.20 UTILITIES                 10,349            10,349
    65.30 CARETAKER SUPPLY           1,500             1,500
    65.40 MAINTENANCE                2,358             2,358
                              ----------------
           SUB-TOTAL                29,952
                              ----------------
       ***  TOTAL  ***             224,996
                              ================
```

APPENDIX 4

COMPLETE SET OF REPORTS FOR THE THE BASE YEAR: 1972/73

```
                                      A   S M A L L   A L B E R T A   S C H O O L                        01/05/73
ITER = (01)  BASE 1972/73                 RESOURCE REQUIREMENTS PREDICTION MODEL               1.6-(06) PAGE   02
BASE = (**)
                                                                   ************************************************
*********************************************************         *  (0001) GENERAL PRIMARY   DEPARTMENT           *
*                                                       *         *      (0001)    PRIMARY             DIVISION    *
*    O R G A N I Z A T I O N A L    B U D G E T         *         *         (0001)     JUNIOR             SCHOOL   *
*                                                       *         ************************************************
*********************************************************
                                                                                    PERCENT OF      PERCENT OF
                          SALARY      FULL TIME                                  ORGANIZATIONAL  INSTRUCTIONAL
                           RATE       EQUIVALENT      PERCENT           COSTS        BUDGET          BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (04)  FACULTY RANK--04   9.085         2.09          69.90           18.988        68.06          11.5500
  (06)  FACULTY RANK--06   7.750          .90          30.10            6.975        25.00           4.2428
                          -------    -----------      -------    --------------    -------       ----------
  (**)  FACULTY TOTALS     8.683         2.99         100.00           25.963        93.07          15.7928
                          =======                     =======
STAFF (BY CATEGORY)
                          -------    -----------      -------    --------------    -------       ----------
                          =======                     =======

EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                 1.650         5.91           1.0037
  (PE)  PERMANENT EQUIPT                                                  253          .91            .1539
  (BR)  BOOK REPAIR                                                        31          .11            .0189
                                                                 --------------    -------       ----------
  (**)  EXPENSE TOTALS                                                  1.934         6.93           1.1764

ADDITIONAL EXPENSES                                              --------------    -------       ----------
                                     -----------                       27.897       100.00          16.9692
        ***  TOTALS  ***                 2.99                    ==============    =======       ==========
                                     ===========
                                   PER-        HOURS      PER-   PERCENT     UNIT          FTE      PER-    PRODUCT.
COSTS BY COURSE LEVEL      COST    CENT      PRODUCED     CENT   TOT HRS     COST        FACULTY    CENT     RATIO

  (PR)   PRIMARY          27.897  100.00        2.388   100.00    17.93     11.68          2.99   100.00     798.66
                   -------------- ------- ------------- ------- ------- ---------- ----------- ------- -----------
  (**)  CRSE LVL TOTALS   27.897  100.00        2.388   100.00    17.93     11.68          2.99   100.00     798.66
                   ============== ======= ============= ======= ======= ========== =========== ======= ===========
ITER = (01)  BASE 1972/73             A  S M A L L   A L B E R T A   S C H O O L                                   01/05/73
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL                         1.6-(06) PAGE   03
                                                                        **************************************************
*****************************************************                  *   (0002) PRIMARY MUSIC       DEPARTMENT          *
*                                                   *                  *     (0001)     PRIMARY              DIVISION     *
*     O R G A N I Z A T I O N A L   B U D G E T     *                  *         (0001)    JUNIOR                 SCHOOL   *
*                                                   *                  **************************************************
*****************************************************
                                                                                                PERCENT OF       PERCENT OF
                              SALARY        FULL TIME                                         ORGANIZATIONAL   INSTRUCTIONAL
                               RATE         EQUIVALENT        PERCENT               COSTS         BUDGET           BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (05)  FACULTY RANK--05       8.600              .17          100.00               1.462          93.06            .8893
                              -------     ------------        -------     ---------------        -------       ----------
   (**)  FACULTY TOTALS        8.600              .17          100.00               1.462          93.06            .8893
                              =======                         =======

STAFF (BY CATEGORY)           -------     ------------        -------     ---------------        -------       ----------
                              =======                         =======

EXPENSES (BY TYPE)                                                                     93           5.92            .0566
  (IM)  INST. MATERIALS                                                                14            .89            .0085
  (PE)  PERMANENT EQUIPT                                                                2            .13            .0012
  (BK)  BOOK REPAIR                                                       ---------------        -------       ----------
                                                                                      109           6.94            .0663
  (**)  EXPENSE TOTALS

ADDITIONAL EXPENSES                                                       ---------------        -------       ----------
                                          ------------                              1.571         100.00            .9556
        *** TOTALS ***                             .17                    ===============        =======       ==========
                                          ============

                                             PER-        HOURS      PER-   PERCENT      UNIT           FTE      PER-      PRODUCT.
COSTS BY COURSE LEVEL            COST        CENT      PRODUCED     CENT   TOT HRS      COST         FACULTY    CENT       RATIO

  (PR)     PRIMARY              1.571      100.00          134    100.00      1.01     11.72             .17   100.00       788.24
                       --------------     -------  -----------   -------   -------  ---------    -----------  -------  -----------
   (**)  CRSE LVL TOTALS        1.571      100.00          134    100.00      1.01     11.72             .17   100.00       788.24
                       ==============     =======  ===========   =======   =======  =========    ===========  =======  ===========
ITER = (01)  BASE 1972/73          A  S M A L L   A L B E R T A   S C H O O L                                         01/05/73
BASE = (**)                           RESOURCE REQUIREMENTS PREDICTION MODEL                                  1.6-(06) PAGE   04
***************************************************       *****************************************************************
*                                                 *       *                                                               *
*    O R G A N I Z A T I O N A L   B U D G E T    *       *     (0001)    PRIMARY                 DIVISION                *
*                                                 *       *          (0001)     JUNIOR                  SCHOOL            *
***************************************************       *****************************************************************

                                SALARY       FULL TIME                                          PERCENT OF      PERCENT OF
                                 RATE        EQUIVALENT        PERCENT               COSTS   ORGANIZATIONAL   INSTRUCTIONAL
CHAIRMAN                                                                                         BUDGET          BUDGET

FACULTY (BY RANK)
  (04)   FACULTY RANK--04        9.085           2.09           66.14               18.988       64.44          11.5500
  (05)   FACULTY RANK--05        8.600            .17            5.38                1.462        4.96            .8893
  (06)   FACULTY RANK--06        7.750            .90           28.48                6.975       23.67           4.2428
                                -------   ------------        -------       --------------     -------       ----------
  (**)   FACULTY TOTALS          8.679           3.16          100.00               27.425       93.07          16.6821
                                =======                       =======
STAFF (BY CATEGORY)
                                -------   ------------        -------       --------------     -------       ----------
                                =======                       =======
EXPENSES (BY TYPE)
  (IM)   INST. MATERIALS                                                         1.743        5.91           1.0602
  (PE)   PERMANENT EQUIPT                                                          267         .91            .1624
  (BR)   BOOK REPAIR                                                                33         .11            .0201
                                                                            --------------     -------       ----------
  (**)   EXPENSE TOTALS                                                          2.043        6.93           1.2427

ADDITIONAL EXPENSES
                                          ------------                      --------------     -------       ----------
         ***  TOTALS  ***                         3.16                              29.468      100.00          17.9248
                                          ============                      ==============     =======       ==========

                                          PER-          HOURS     PER-    PERCENT      UNIT           FTE      PER-      PRODUCT.
COSTS BY COURSE LEVEL            COST     CENT       PRODUCED     CENT    TOT HRS      COST        FACULTY     CENT        RATIO

  (PR)   PRIMARY               29.468   100.00          2.522   100.00      18.94     11.68           3.16   100.00       798.10
                        -------------  -------   ------------  -------    -------  ---------    ----------  -------  -----------
  (**)   CRSE LVL TOTALS       29.468   100.00          2.522   100.00      18.94     11.68           3.16   100.00       798.10
                        =============  =======   ============  =======    =======  =========    ==========  =======  ===========
ITER = (01)  BASE 1972/73          A   S M A L L   A L B E R T A   S C H O O L                              01/05/73
BASE = (**)                             RESOURCE REQUIREMENTS PREDICTION MODEL                         1.6-(06) PAGE   05

**************************************************             ************************************************************
*                                                *             *   (0003) GEN. ELEMENTARY    DEPARTMENT                   *
*    O R G A N I Z A T I O N A L   B U D G E T   *             *      (0002)    ELEMENTARY              DIVISION          *
*                                                *             *         (0001)     JUNIOR                  SCHOOL        *
**************************************************             ************************************************************

                                                                                                PERCENT OF       PERCENT OF
                                SALARY       FULL TIME                                       ORGANIZATIONAL   INSTRUCTIONAL
                                 RATE        EQUIVALENT        PERCENT                COSTS      BUDGET           BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (04)  FACULTY RANK--04        9.000              .81           30.00                7.290      30.26            4.4344
  (06)  FACULTY RANK--06        7.755             1.89           70.00               14.657      60.83            8.9156
                               -------     ------------        -------       --------------    -------        ----------
  (**)  FACULTY TOTALS          8.129             2.70          100.00               21.947      91.09           13.3499
                               =======                         =======
STAFF (BY CATEGORY)            -------     ------------        -------       --------------    -------        ----------
                               =======                         =======

EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                               1.832       7.60            1.1144
  (PE)  PERMANENT EQUIPT                                                                281       1.17             .1709
  (BR)  BOOK REPAIR                                                                      34        .14             .0207
                                                                             --------------    -------        ----------
  (**)  EXPENSE TOTALS                                                                2.147       8.91            1.3060

ADDITIONAL EXPENSES
                                           ------------                      --------------    -------        ----------
          ***  TOTALS  ***                        2.70                               24.094     100.00           14.6559
                                           ============                      ==============    =======        ==========

                                          PER-        HOURS      PER-    PERCENT      UNIT          FTE       PER-       PRODUCT.
COSTS BY COURSE LEVEL           COST      CENT      PRODUCED     CENT    TOT HRS      COST        FACULTY     CENT        RATIO

  (EL)  ELEMENTARY            24.094    100.00        2.628    100.00     19.74       9.17          2.70    100.00       973.33
                          ------------  -------  -------------  -------  -------  ----------  ------------  -------  -----------
  (**)  CRSE LVL TOTALS       24.094    100.00        2.628    100.00     19.74       9.17          2.70    100.00       973.33
                          ============  =======  =============  =======  =======  ==========  ============  =======  ===========
ITER = (01)  BASE 1972/73            A   S M A L L   A L B E R T A   S C H O O L                        01/05/73
BASE = (**)                             RESOURCE REQUIREMENTS PREDICTION MODEL                  1.6-(06) PAGE   06

***************************************************          *******************************************************
*                                                 *          *  (0004) ELEMENTARY MUSIC  DEPARTMENT                *
*     O R G A N I Z A T I O N A L   B U D G E T   *          *     (0002)    ELEMENTARY           DIVISION         *
*                                                 *          *        (0001)    JUNIOR               SCHOOL        *
***************************************************          *******************************************************

                                                                                  PERCENT OF       PERCENT OF
                              SALARY       FULL TIME                            ORGANIZATIONAL   INSTRUCTIONAL
                               RATE        EQUIVALENT       PERCENT      COSTS      BUDGET           BUDGET
CHAIRMAN

FACULTY (BY RANK)
  (05)  FACULTY RANK--05       8.600              .17        100.00       1.462       91.49             .8893
                              -------     -----------       -------  ----------     -------        ----------
  (**)  FACULTY TOTALS         8.600              .17        100.00       1.462       91.49             .8893
                              =======                       =======
STAFF (BY CATEGORY)
                              -------     -----------       -------  ----------     -------        ----------
                              =======                       =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                     116        7.26             .0706
  (PE)  PERMANENT EQUIPT                                                     18        1.13             .0109
  (BR)  BOOK REPAIR                                                           2         .13             .0012
                                                                     ----------     -------        ----------
  (**)  EXPENSE TOTALS                                                      136        8.51             .0827

ADDITIONAL EXPENSES
                                          -----------                ----------     -------        ----------
        ***  TOTALS  ***                          .17                     1.598      100.00             .9720
                                          ===========                ==========     =======        ==========
                                 PER-         HOURS    PER-   PERCENT    UNIT         FTE     PER-    PRODUCT.
COSTS BY COURSE LEVEL     COST   CENT       PRODUCED   CENT   TOT HRS    COST       FACULTY   CENT     RATIO

  (EL)  ELEMENTARY       1.598  100.00          166  100.00     1.25     9.63           .17  100.00     976.47
                    ---------- -------  ----------- ------- ------- --------   ----------- ------- ----------
  (**)  CRSE LVL TOTALS  1.598  100.00          166  100.00     1.25     9.63           .17  100.00     976.47
                    ========== =======  =========== ======= ======= ========   =========== ======= ==========
ITER = (01)  BASE 1972/73             A   S M A L L   A L B E R T A   S C H O O L                                  01/05/73
BASE = (**)                                RESOURCE REQUIREMENTS PREDICTION MODEL                          1.6-(06) PAGE   07

**************************************************************          **************************************************************
*                                                            *          *  (0005) ELEM. PHYS. ED.    DEPARTMENT                       *
*      O R G A N I Z A T I O N A L   B U D G E T             *          *     (0002)   ELEMENTARY              DIVISION               *
*                                                            *          *        (0001)    JUNIOR                   SCHOOL            *
**************************************************************          **************************************************************

                                                                                                   PERCENT OF        PERCENT OF
                                    SALARY       FULL TIME                                       ORGANIZATIONAL    INSTRUCTIONAL
                                     RATE        EQUIVALENT       PERCENT                COSTS      BUDGET            BUDGET
CHAIRMAN

FACULTY (BY RANK)
  (04)  FACULTY RANK--04            9.000              .05         16.13                  450       15.84             .2737
  (05)  FACULTY RANK--05            8.518              .17         54.84                1.448       50.97             .8808
  (06)  FACULTY RANK--06            7.756              .09         29.03                  698       24.57             .4246
                                  -------      -----------       -------       --------------     -------         ---------
  (**)  FACULTY TOTALS              8.374              .31        100.00                2.596       91.38            1.5791
                                  =======                        =======
STAFF (BY CATEGORY)
                                  -------      -----------       -------       --------------     -------         ---------
                                  =======                        =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                                   209        7.36             .1271
  (PE)  PERMANENT EQUIPT                                                                   32        1.13             .0195
  (BR)  BOOK REPAIR                                                                         4         .14             .0024
                                                                               --------------     -------         ---------
  (**)  EXPENSE TOTALS                                                                    245        8.62             .1490

ADDITIONAL EXPENSES
                                               -----------                     --------------     -------         ---------
        ***  TOTALS  ***                               .31                              2.841      100.00            1.7281
                                               ===========                     ==============     =======         =========
                                           PER-          HOURS     PER-   PERCENT       UNIT           FTE       PER-      PRODUCT.
COSTS BY COURSE LEVEL              COST    CENT        PRODUCED    CENT   TOT HRS       COST         FACULTY     CENT        RATIO

  (EL)  ELEMENTARY                2.841  100.00             300  100.00      2.25       9.47             .31   100.00       967.74
                             -------------- ------- ------------ ------- ------- ----------     ----------- ------- -----------
  (**)  CRSE LVL TOTALS           2.841  100.00             300  100.00      2.25       9.47             .31   100.00       967.74
                             ============== ======= ============ ======= ======= ==========     =========== ======= ===========
                                                                                                          01/05/73
                                        A   S M A L L   A L B E R T A   S C H O O L           1.6-(06) PAGE   08
ITER = (01)  BASE 1972/73              RESOURCE REQUIREMENTS PREDICTION MODEL
BASE = (**)                                                  ***************************************************
******************************************************       *                                                 *
*                                                    *       *     (0002)  ELEMENTARY          DIVISION        *
*     O R G A N I Z A T I O N A L   B U D G E T      *       *       (0001)    JUNIOR               SCHOOL     *
*                                                    *       ***************************************************
******************************************************
                                                                                      PERCENT OF      PERCENT OF
                                                                                    ORGANIZATIONAL  INSTRUCTIONAL
                            SALARY        FULL TIME                                     BUDGET          BUDGET
                             RATE        EQUIVALENT      PERCENT               COSTS

CHAIRMAN
                                                                               7,740       27.13          4.7081
FACULTY (BY RANK)            9,000             .86         27.04               2,910       10.20          1.7701
  (04)  FACULTY RANK--04     8,559             .34         10.69              15,355       53.81          9.3401
  (05)  FACULTY RANK--05     7,755            1.98         62.26      ---------------    --------      ----------
  (06)  FACULTY RANK--06   -------     ------------      -------              26,005       91.14         15.8183
                             8,178            3.18        100.00
   (**)  FACULTY TOTALS    =======                       =======
                                                                      ---------------    --------      ----------
 STAFF (BY CATEGORY)       -------     ------------      -------
                           =======                       =======
                                                                                                          1.3121
                                                                               2,157        7.56           .2013
 EXPENSES (BY TYPE)                                                              331        1.16           .0243
   (IM)  INST. MATERIALS                                                          40         .14     ----------
   (PE)  PERMANENT EQUIPT                                             ---------------    --------         1.5377
   (BR)  BOOK REPAIR                                                           2,528        8.86

   (**)  EXPENSE TOTALS
                                                                      ---------------    --------      ----------
 ADDITIONAL EXPENSES                   ------------                           28,533      100.00         17.3561
                                               3.18                   ===============    ========      ==========
          ***  TOTALS  ***             ============
                                                                                                   
                                           PER-        HOURS    PER-    PERCENT     UNIT        FTE     PER-    PRODUCT.
                                 COST      CENT     PRODUCED    CENT    TOT HRS     COST    FACULTY     CENT       RATIO
 COSTS BY COURSE LEVEL
                               28,533    100.00        3,094  100.00      23.24     9.22       3.18   100.00      972.96
   (EL)   ELEMENTARY      -----------   -------  -----------  ------    -------  -------  ---------  -------  ----------
                               28,533    100.00        3,094  100.00      23.24     9.22       3.18   100.00      972.96
   (**)   CRSE LVL TOTALS =============  =======  ===========  ======    =======  =======  =========  =======  ==========
ITER = (01)  BASE 1972/73            A   S M A L L   A L B E R T A   S C H O O L                                .01/05/73
BASE = (**)                           RESOURCE REQUIREMENTS PREDICTION MODEL                          1.6-(06) PAGE    09

*******************************************************            *******************************************************
*                                                     *            *                                                     *
*     O R G A N I Z A T I O N A L   B U D G E T       *            *       (0001)     JUNIOR            SCHOOL           *
*                                                     *            *                                                     *
*******************************************************            *******************************************************

                                                                                          PERCENT OF       PERCENT OF
                               SALARY      FULL TIME                                    ORGANIZATIONAL   INSTRUCTIONAL
                                RATE      EQUIVALENT       PERCENT               COSTS      BUDGET           BUDGET
CHAIRMAN

FACULTY (BY RANK)
  (04)  FACULTY RANK--04       9,060           2.95          46.53              26,728       46.08          16.2581
  (05)  FACULTY RANK--05       8,573            .51           8.04               4,372        7.54           2.6594
  (06)  FACULTY RANK--06       7,753           2.88          45.43              22,330       38.50          13.5829
                              -------    -----------       -------       -------------     -------        ---------
  (**)  FACULTY TOTALS         8,427           6.34         100.00              53,430       92.12          32.5004
                              =======                      =======
STAFF (BY CATEGORY)
                              -------    -----------       -------       -------------     -------        ---------
                              =======                      =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                          3,900        6.72           2.3723
  (PE)  PERMANENT EQUIPT                                                           598        1.03            .3638
  (BR)  BOOK REPAIR                                                                 73         .13            .0444
                                                                         -------------     -------        ---------
  (**)  EXPENSE TOTALS                                                           4,571        7.88           2.7804

ADDITIONAL EXPENSES
                                         -----------                     -------------     -------        ---------
        ***  TOTALS  ***                       6.34                             58,001      100.00          35.2808
                                         ===========                     =============     =======        =========

                                         PER-         HOURS     PER-   PERCENT     UNIT          FTE      PER-     PRODUCT.
COSTS BY COURSE LEVEL           COST     CENT       PRODUCED    CENT   TOT HRS     COST        FACULTY    CENT      RATIO

  (PR)    PRIMARY             29,468     50.81         2,522    44.91    18.94     11.68          3.16    49.84      798.10
  (EL)   ELEMENTARY           28,533     49.19         3,094    55.09    23.24      9.22          3.18    50.16      972.96
                       -------------   -------   -----------  -------  -------  ---------  -----------  -------  ----------
  (**)  CRSE LVL TOTALS       58,001    100.00         5,616   100.00    42.17     10.33          6.34   100.00      885.80
                       =============   =======   ===========  =======  =======  =========  ===========  =======  ==========
ITER = (01)  BASE 1972/73          A   S M A L L   A L B E R T A   S C H O O L                                          01/05/73
BASE = (**)                          RESOURCE REQUIREMENTS PREDICTION MODEL                                    1.6-(06) PAGE   10

**********************************************************          **********************************************************
*                                                        *          *  (0006) JUN. LANG. ARTS    DEPARTMENT                  *
*      O R G A N I Z A T I O N A L   B U D G E T         *          *      (0003)   JUNIOR HIGH           DIVISION           *
*                                                        *          *          (0002)     SENIOR               SCHOOL        *
**********************************************************          **********************************************************

                                                                                          PERCENT OF      PERCENT OF
                                 SALARY       FULL TIME                                ORGANIZATIONAL  INSTRUCTIONAL
                                  RATE        EQUIVALENT      PERCENT           COSTS      BUDGET          BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (03)   FACULTY RANK--03        12,531              .29        24.79           3,634       29.72          2.2105
  (04)   FACULTY RANK--04         9,569              .29        24.79           2,775       22.70          1.6880
  (05)   FACULTY RANK--05         8,288              .59        50.43           4,890       39.99          2.9745
                                -------     ------------      -------    ------------     -------       ---------
  (**)   FACULTY TOTALS           9,657             1.17       100.00          11,299       92.41          6.8730
                                =======                       =======
STAFF (BY CATEGORY)
                                -------     ------------      -------    ------------     -------       ---------
                                =======                       =======
EXPENSES (BY TYPE)
  (IM)   INST. MATERIALS                                                          768        6.28           .4672
  (PE)   PERMANENT EQUIPT                                                         143        1.17           .0870
  (BR)   BOOK REPAIR                                                               17         .14           .0103
                                                                         ------------     -------       ---------
  (**)   EXPENSE TOTALS                                                           928        7.59           .5645

ADDITIONAL EXPENSES
                                            ------------                 ------------     -------       ---------
         *** TOTALS ***                             1.17                       12,227      100.00          7.4374
                                            ============                 ============     =======       =========
                                          PER-         HOURS     PER-   PERCENT     UNIT           FTE     PER-      PRODUCT.
COSTS BY COURSE LEVEL             COST    CENT      PRODUCED     CENT   TOT HRS     COST       FACULTY     CENT       RATIO

  (JH)   JUNIOR HIGH            12,227  100.00         1,340   100.00     10.06     9.12          1.17   100.00    1,145.30
                          ------------- ------- ------------  ------- ------- ---------    ---------- -------  ----------
  (**)   CRSE LVL TOTALS        12,227  100.00         1,340   100.00     10.06     9.12          1.17   100.00    1,145.30
                          ============= ======= ============  ======= ======= =========    ========== =======  ==========
ITER = (01)  BASE 1972/73          A  SMALL  ALBERTA  SCHOOL                                          01/05/73
BASE = (**)                        RESOURCE REQUIREMENTS PREDICTION MODEL                     1.6-(06) PAGE   11

*******************************************************       ******************************************************
*                                                     *       *  (0007) JUN. SOCIAL SCI.  DEPARTMENT                 *
*    ORGANIZATIONAL  BUDGET                           *       *     (0003)  JUNIOR HIGH          DIVISION            *
*                                                     *       *        (0002)    SENIOR              SCHOOL          *
*******************************************************       ******************************************************

                                                                                    PERCENT OF       PERCENT OF
                             SALARY        FULL TIME                               ORGANIZATIONAL  INSTRUCTIONAL
                              RATE         EQUIVALENT       PERCENT          COSTS      BUDGET          BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (01)  FACULTY RANK--01     16.600             .03            3.75             498       4.55           .3029
  (02)  FACULTY RANK--02     13.050             .74           92.50           9,657      88.28          5.8742
  (05)  FACULTY RANK--05      8.600             .03            3.75             258       2.36           .1569
                            -------    -----------         -------   -------------    -------       ---------
  (**)  FACULTY TOTALS       13.016             .80          100.00          10,413      95.19          6.3340
                            =======                        =======
STAFF (BY CATEGORY)
                            -------    -----------         -------   -------------    -------       ---------
                            =======                        =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                         457       4.18           .2780
  (PE)  PERMANENT EQUIPT                                                         61        .56           .0371
  (BR)  BOOK REPAIR                                                               8        .07           .0049
                                                                     -------------    -------       ---------
  (**)  EXPENSE TOTALS                                                          526       4.81           .3200

ADDITIONAL EXPENSES
                                       -----------                   -------------    -------       ---------
        ***  TOTALS  ***                        .80                          10,939     100.00          6.6540
                                       ===========                   =============    =======       =========
                                       PER-         HOURS    PER-   PERCENT     UNIT          FTE    PER-     PRODUCT.
COSTS BY COURSE LEVEL          COST    CENT       PRODUCED   CENT   TOT HRS     COST      FACULTY    CENT       RATIO

  (JH)   JUNIOR HIGH          10,939  100.00           797  100.00     5.99    13.73          .80  100.00      996.25
         ------------------------- ------- ------------- ------- ------- ---------   ---------- ------- -----------
  (**)   CRSE LVL TOTALS      10,939  100.00           797  100.00     5.99    13.73          .80  100.00      996.25
         ========================= ======= ============= ======= ======= =========   ========== ======= ===========
ITER = (01)  BASE 1972/73          A  S M A L L   A L B E R T A   S C H O O L                                  01/05/73
BASE = (**)                            RESOURCE REQUIREMENTS PREDICTION MODEL                          1.6-(06) PAGE   12
************************************************************      ******************************************************
*                                                          *      *  (0008) JUNIOR SCIENCF    DEPARTMENT               *
*     O R G A N I Z A T I O N A L   B U D G E T            *      *     (0003)  JUNIOR HIGH            DIVISION        *
*                                                          *      *        (0002)    SENIOR                  SCHOOL    *
************************************************************      ******************************************************

                                 SALARY      FULL TIME                                    PERCENT OF        PERCENT OF
                                  RATE       EQUIVALENT      PERCENT            COSTS  ORGANIZATIONAL   INSTRUCTIONAL
CHAIRMAN                                                                                   BUDGET            BUDGET

FACULTY (BY RANK)
  (02)  FACULTY RANK--02         13,000             .68       100.00            8,840       94.81            5.3772
                                 -------   -----------       -------    -------------     -------         ---------
  (**)  FACULTY TOTALS           13,000             .68       100.00            8,840       94.81            5.3772
                                 =======                      =======
STAFF (BY CATEGORY)
                                 -------   -----------       -------    -------------     -------         ---------
                                 =======                      =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                           421        4.52             .2561
  (PE)  PERMANENT EQUIPT                                                           56         .60             .0341
  (BR)  BOOK REPAIR                                                                 7         .08             .0043
                                                                         -------------     -------         ---------
  (**)  EXPENSE TOTALS                                                            484        5.19             .2944

ADDITIONAL EXPENSES
                                           -----------                   -------------     -------         ---------
        ***  TOTALS  ***                           .68                          9,324      100.00            5.6716
                                           ===========                   =============     =======         =========

                                        PER-        HOURS    PER-   PERCENT      UNIT         FTE      PER-    PRODUCT.
COSTS BY COURSE LEVEL         COST      CENT     PRODUCED    CENT   TOT HRS      COST       FACULTY    CENT     RATIO

  (JH)   JUNIOR HIGH         9,324    100.00          735  100.00      5.52     12.69           .68  100.00   1,080.88
                    --------------   -------  -----------  ------- -------  ---------   ----------- -------  ----------
  (**)   CRSE LVL TOTALS     9,324    100.00          735  100.00      5.52     12.69           .68  100.00   1,080.88
                    ==============   =======  ===========  ======= =======  =========   =========== =======  ==========
ITER = (01)  BASE 1972/73                 A   S M A L L   A L B E R T A   S C H O O L                                      01/05/73
BASE = (**)                                    RESOURCE REQUIREMENTS PREDICTION MODEL                              1.6-(06) PAGE   13

*************************************************************           ***************************************************************
*                                                           *           *  (0009) JUNIOR MATH      DEPARTMENT                         *
*     O R G A N I Z A T I O N A L   B U D G E T             *           *     (0003)  JUNIOR HIGH             DIVISION                *
*                                                           *           *         (0002)    SENIOR                SCHOOL              *
*************************************************************           ***************************************************************

                                                                                                 PERCENT OF       PERCENT OF
                                 SALARY        FULL TIME                                       ORGANIZATIONAL   INSTRUCTIONAL
                                  RATE         EQUIVALENT        PERCENT              COSTS        BUDGFT            BUDGET
CHAIRMAN

FACULTY (BY RANK)
  (01)  FACULTY RANK--01        16.593               .15           25.42              2.489         38.70            1.5140
  (05)  FACULTY RANK--05         8.287               .15           25.42              1.243         19.33             .7561
  (06)  FACULTY RANK--06         7.786               .29           49.15              2.258         35.11            1.3735
                                -------       -----------        -------     --------------       -------         ---------
  (**)  FACULTY TOTALS          10.153               .59          100.00              5.990         93.13            3.6436
                                =======                           =======
STAFF (BY CATEGORY)
                                -------       -----------        -------     --------------       -------         ---------
                                =======                           =======

EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                                 384          5.97             .2336
  (PE)  PERMANENT EQUIPT                                                                 51           .79             .0310
  (BR)  BOOK REPAIR                                                                       7           .11             .0043
                                                                             --------------       -------         ---------
  (**)  EXPENSE TOTALS                                                                  442          6.87             .2689

ADDITIONAL EXPENSES
                                              -----------                    --------------       -------         ---------
        ***  TOTALS  ***                             .59                              6.432        100.00            3.9125
                                              ===========                    ==============       =======         =========

                                       PER-          HOURS     PER-   PERCENT       UNIT              FTE     PER-      PRODUCT.
COSTS BY COURSE LEVEL         COST     CENT       PRODUCED     CENT   TOT HRS       COST          FACULTY     CENT       RATIO

  (JH)   JUNIOR HIGH         6.432   100.00            670   100.00      5.03       9.60              .59   100.00    1.135.59
                    -------------- -------   ------------  -------   -------  ---------      ----------- -------  -----------
  (**)  CRSE LVL TOTALS      6.432   100.00            670   100.00      5.03       9.60              .59   100.00    1.135.59
                    ============== =======   ============  =======   =======  =========      =========== =======  ===========
ITER = (01)  BASE 1972/73            A   S M A L L   A L B E R T A   S C H O O L                                01/05/73
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL                        1.6-(06) PAGE   14

****************************************************          ******************************************************
*                                                  *          *  (0010) JUNIOR PHYS. ED.   DEPARTMENT              *
*     O R G A N I Z A T I O N A L   B U D G E T    *          *      (0003)   JUNIOR HIGH          DIVISION        *
*                                                  *          *           (0002)    SENIOR                SCHOOL   *
****************************************************          ******************************************************

                                                                                   PERCENT OF      PERCENT OF
                              SALARY       FULL TIME                              ORGANIZATIONAL  INSTRUCTIONAL
                               RATE       EQUIVALENT        PERCENT          COSTS     BUDGET          BUDGET
CHAIRMAN

FACULTY (BY RANK)
  (03)  FACULTY RANK--03      11.550              .02          5.13            231       6.30           .1405
  (05)  FACULTY RANK--05       8.516              .37         94.87          3.151      85.98          1.9167
                             -------      -----------       -------  -------------    -------      ----------
  (**)  FACULTY TOTALS         8.672              .39        100.00          3.382      92.28          2.0572
                             =======                        =======
STAFF (BY CATEGORY)
                             -------      -----------       -------  -------------    -------      ----------
                             =======                        =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                        246       6.71           .1496
  (PE)  PERMANENT EQUIPT                                                        33        .90           .0201
  (BR)  BOOK REPAIR                                                              4        .11           .0024
                                                                     -------------    -------      ----------
  (**)  EXPENSE TOTALS                                                         283       7.72           .1721

ADDITIONAL EXPENSES
                                          -----------                -------------    -------      ----------
       ***  TOTALS  ***                           .39                        3.665     100.00          2.2293
                                          ===========                =============    =======      ==========
                                     PER-         HOURS   PER-  PERCENT     UNIT            FTE    PER-    PRODUCT.
COSTS BY COURSE LEVEL          COST  CENT      PRODUCED   CENT  TOT HRS     COST        FACULTY    CENT     RATIO

  (JH)  JUNIOR HIGH           3.665  100.00         429  100.00    3.22      8.54           .39  100.00    1.100.00
                      ------------- -------  ----------- ------- ------- ---------   ----------- ------- -----------
  (**)  CRSE LVL TOTALS       3.665  100.00         429  100.00    3.22      8.54           .39  100.00    1.100.00
                      ============= =======  =========== ======= ======= =========   =========== ======= ===========
ITER = (01)  BASE 1972/73            A   S M A L L   A L B E R T A   S C H O O L                                    01/05/73
BASE = (**)                               RESOURCE REQUIREMENTS PREDICTION MODEL                            1.6-(06) PAGE   15

*******************************************************          ***************************************************************
*                                                     *          *  (0011) JUNIOR HOME EC.    DEPARTMENT                         *
*     O R G A N I Z A T I O N A L   B U D G E T       *          *       (0003)  JUNIOR HIGH          DIVISION                   *
*                                                     *          *           (0002)    SENIOR               SCHOOL               *
*******************************************************          ***************************************************************

                                                                                          PERCENT OF      PERCENT OF
                                 SALARY       FULL TIME                                 ORGANIZATIONAL  INSTRUCTIONAL
                                  RATE       EQUIVALENT       PERCENT          COSTS        BUDGET          BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (05)  FACULTY RANK--05         8.474             .35        100.00           2,966        71.96          1.8042
                                -------    -----------       -------  --------------      -------      ----------
  (**)  FACULTY TOTALS           8.474             .35        100.00           2,966        71.96          1.8042
                                =======                       =======

STAFF (BY CATEGORY)             -------    -----------       -------  --------------      -------      ----------
                                =======                       =======

EXPENSES (BY TYPE)                                                               165         4.00           .1004
  (IM)  INST. MATERIALS                                                           22          .53           .0134
  (PE)  PERMANENT EQUIPT                                                           3          .07           .0018
  (BR)  BOOK REPAIR                                                              866        21.01           .5268
  (GL)     GRASSLANDS                                                 --------------      -------      ----------
                                                                               1,056        25.62           .6423
  (**)  EXPENSE TOTALS

ADDITIONAL EXPENSES                                                              100         2.43           .0608
                                           -----------                --------------      -------      ----------
        ***  TOTALS  ***                           .35                         4.122       100.00          2.5073
                                           ===========                ==============      =======      ==========

                                         PER-        HOURS    PER-   PERCENT     UNIT          FTE     PER-    PRODUCT.
COSTS BY COURSE LEVEL          COST      CENT     PRODUCED    CENT   TOT HRS     COST      FACULTY     CENT     RATIO

  (JH)   JUNIOR HIGH          4,122    100.00          288  100.00      2.16    14.31          .35   100.00     822.86
                     --------------   -------  -----------  ------   -------  --------  ----------  -------  ----------
  (**)   CRSE LVL TOTALS      4.122    100.00          288  100.00      2.16    14.31          .35   100.00     822.86
                     ==============   =======  ===========  ======   =======  ========  ==========  =======  ==========
                                          A   S M A L L   A L B E R T A   S C H O O L                                01/05/73
ITER = (01)  BASE 1972/73                   RESOURCE REQUIREMENTS PREDICTION MODEL                          1.6-(06) PAGE   16
BASE = (**)
                                                                     ****************************************************
*****************************************************                *  (0012) JUNIOR IND. ARTS   DEPARTMENT                 *
*                                                   *                *     (0003)  JUNIOR HIGH               DIVISION        *
*    O R G A N I Z A T I O N A L   B U D G E T      *                *        (0002)    SENIJR                  SCHOOL       *
*                                                   *                ****************************************************
*****************************************************
                                                                                       PERCENT OF        PERCENT OF
                            SALARY       FULL TIME                                   ORGANIZATIONAL    INSTRUCTIONAL
                             RATE        EQUIVALENT      PERCENT             COSTS       BUDGET            BUDGET

CHAIRMAN

FACULTY (BY RANK)                                        100.00              2,647       68.88            1.6101
   (06)  FACULTY RANK--06   7,785              .34       -------      ------------      -------        ---------
                           -------       -----------     100.00              2,647       68.88            1.6101
   (**)  FACULTY TOTALS     7,785              .34       =======
                           =======
STAFF (BY CATEGORY)        -------       -----------     -------      ------------      -------        ---------
                           =======                       =======

EXPENSES (BY TYPE)                                                             150        3.90             .0912
   (IM)  INST. MATERIALS                                                        20         .52             .0122
   (PE)  PERMANENT EQUIPT                                                        3         .08             .0018
   (BR)  BOOK REPAIR                                                           773       20.11             .4702
   (GL)    GRASSLANDS                                                 ------------      -------        ---------
                                                                               946       24.62             .5754
   (**)  EXPENSE TOTALS
                                                                               250        6.51             .1521
 ADDITIONAL EXPENSES                     -----------                  ------------      -------        ---------
                                                                             3,843      100.00            2.3376
        ***  TOTALS  ***                       .34                    ============      =======        =========
                                         ===========
                                      PER-        HOURS     PER-    PERCENT      UNIT          FTE      PER-    PRODUCT.
                            COST      CENT      PRODUCED    CENT    TOT HRS      COST        FACULTY    CENT     RATIO
COSTS BY COURSE LEVEL                                                           14.72            .34   100.00      767.65
                                                    261   100.00      1.96    ---------   ----------  -------  ----------
   (JH)   JUNIOR HIGH      3,843    100.00  ------------  -------   -------      14.72            .34   100.00      767.65
                    -------------   ------          261   100.00      1.96    =========   ==========  =======  ==========
   (**)   CRSE LVL TOTALS  3,843    100.00  ============  =======   =======
                    =============   ======
ITER = (01)  BASE 1972/73             A   S M A L L   A L B E R T A   S C H O O L                                   01/05/73
BASE = (**)                             RESOURCE REQUIREMENTS PREDICTION MODEL                          1.6-(06) PAGE    17

************************************************************        ****************************************************************
*                                                          *        *  (0013) JUNIOR MUSIC          DEPARTMENT                    *
*      O R G A N I Z A T I O N A L   B U D G E T           *        *     (0003)  JUNIOR HIGH               DIVISION              *
*                                                          *        *         (0002)    SENIOR                    SCHOOL          *
************************************************************        ****************************************************************

                                                                                              PERCENT OF        PERCENT OF
                               SALARY        FULL TIME                                      ORGANIZATIONAL    INSTRUCTIONAL
                                RATE        EQUIVALENT        PERCENT              COSTS        BUDGET            BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (05)  FACULTY RANK--05        8.600              .16         100.00              1,376        94.05             .8370
                               -------    ------------        -------    ---------------      -------         ---------
  (**)  FACULTY TOTALS          8.600              .16         100.00              1,376        94.05             .8370
                               =======                        =======
STAFF (BY CATEGORY)
                               -------    ------------        -------    ---------------      -------         ---------
                               =======                        =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                               76         5.19             .0462
  (PE)  PERMANENT EQUIPT                                                              10          .68             .0061
  (BR)  BOOK REPAIR                                                                    1          .07             .0006
                                                                         ---------------      -------         ---------
  (**)  EXPENSE TOTALS                                                                87         5.95             .0529

ADDITIONAL EXPENSES
                                          ------------                   ---------------      -------         ---------
       ***  TOTALS  ***                            .16                             1,463       100.00             .8899
                                          ============                   ===============      =======         =========

                                             PER-           HOURS      PER-    PERCENT      UNIT          FTE      PER-      PRODUCT.
COSTS BY COURSE LEVEL             COST       CENT         PRODUCED     CENT    TOT HRS      COST        FACULTY    CENT        RATIO

  (JH)    JUNIOR HIGH             1,463    100.00              132   100.00       .99      11.08            .16   100.00       825.00
                         --------------   -------     ------------   -------   -------   ---------   -----------  -------   ----------
  (**)    CRSE LVL TOTALS         1,463    100.00              132   100.00       .99      11.08            .16   100.00       825.00
                         ==============   =======     ============   =======   =======   =========   ===========  =======   ==========
ITER = (01)  BASE 1972/73                 A   S M A L L   A L B E R T A   S C H O O L                              01/05/73
BASE = (**)                                 RESOURCE REQUIREMENTS PREDICTION MODEL                           1.6-(06) PAGE   18

*************************************************************          ***********************************************************
*                                                           *          *  (0014) GUIDANCE            DEPARTMENT                  *
*     O R G A N I Z A T I O N A L   B U D G E T             *          *        (0003)  JUNIOR HIGH          DIVISION            *
*                                                           *          *            (0002)    SENIOR             SCHOOL          *
*************************************************************          ***********************************************************

                                                                                             PERCENT OF          PERCENT OF
                                SALARY        FULL TIME                                    ORGANIZATIONAL      INSTRUCTIONAL
                                 RATE         EQUIVALENT          PERCENT            COSTS     BUDGET              BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (03)  FACULTY RANK--03        11.531               .16          100.00             1.845     96.14               1.1223
                                -------       ------------        -------   ---------------   -------           ---------
  (**)  FACULTY TOTALS          11.531               .16          100.00             1.845     96.14               1.1223
                                =======                           =======
STAFF (BY CATEGORY)
                                -------       ------------        -------   ---------------   -------           ---------
                                =======                           =======

EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                                 64      3.34                .0399
  (PE)  PERMANENT EQUIPT                                                                 9       .47                .0055
  (BR)  BOOK REPAIR                                                                      1       .05                .0006
                                                                            ---------------   -------           ---------
  (**)  EXPENSE TOTALS                                                                  74      3.86                .0450

ADDITIONAL EXPENSES
                                              ------------                  ---------------   -------           ---------
        ***  TOTALS  ***                             .16                             1.919    100.00               1.1673
                                              ============                  ===============   =======           =========

                                        PER-          HOURS    PER-   PERCENT       UNIT           FTE     PER-      PRODUCT.
COSTS BY COURSE LEVEL          COST     CENT       PRODUCED    CENT   TOT HRS       COST       FACULTY     CENT       RATIO

  (JH)   JUNIOR HIGH              1.919  100.00          112  100.00       .84      17.13           .16  100.00       700.00
                        ---------------  -------  ------------  -------  -------  ---------   -----------  -------  -----------
  (**)  CRSE LVL TOTALS           1.919  100.00          112  100.00       .84      17.13           .16  100.00       700.00
                        ===============  =======  ============  =======  =======  =========   ===========  =======  ===========
ITER = (01)  BASE 1972/73         A  S M A L L   A L B E R T A   S C H O O L                              01/05/73
BASE = (**)                         RESOURCE REQUIREMENTS PREDICTION MODEL                        1.6-(06) PAGE    19

*****************************************************         *****************************************************
*                                                   *         *                                                   *
*     O R G A N I Z A T I O N A L   B U D G E T     *         *     (0003)  JUNIOR HIGH           DIVISION          *
*                                                   *         *        (0002)     SENIOR             SCHOOL         *
*****************************************************         *****************************************************

                                                                                      PERCENT OF      PERCENT OF
                               SALARY      FULL TIME                               ORGANIZATIONAL  INSTRUCTIONAL
                                RATE      EQUIVALENT        PERCENT          COSTS     BUDGET          BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (01)  FACULTY RANK--01       16.594            .18          3.88           2.987      5.54          1.8169
  (02)  FACULTY RANK--02       13.026           1.42         30.60          18.497     34.30         11.2514
  (03)  FACULTY RANK--03       12.149            .47         10.13           5.710     10.59          3.4733
  (04)  FACULTY RANK--04        9.569            .29          6.25           2.775      5.15          1.6880
  (05)  FACULTY RANK--05        8.415           1.65         35.56          13.884     25.74          8.4454
  (06)  FACULTY RANK--06        7.786            .63         13.58           4.905      9.09          2.9836
                              -------    -----------       -------  --------------   -------       ---------
  (**)  FACULTY TOTALS         10.508           4.64        100.00          48.758     90.40         29.6585
                              =======                      =======
STAFF (BY CATEGORY)
                              -------    -----------       -------  --------------   -------       ---------
                              =======                      =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                      2.731      5.06          1.6612
  (PE)  PERMANENT EQUIPT                                                       405       .75           .2464
  (BR)  BOOK REPAIR                                                             51       .09           .0310
  (GL)     GRASSLANDS                                                        1.639      3.04           .9970
                                                                    --------------   -------       ---------
  (**)  EXPENSE TOTALS                                                       4.826      8.95          2.9356

ADDITIONAL EXPENSES                                                            350       .65           .2129
                                         -----------                --------------   -------       ---------
        ***  TOTALS  ***                        4.64                        53.934    100.00         32.8070
                                         ===========                ========0=====   =======       =========
                                        PER-         HOURS     PER-   PERCENT       UNIT          FTE      PER-     PRODUCT.
COSTS BY COURSE LEVEL           COST    CENT      PRODUCED     CENT   TOT HRS       COST       FACULTY     CENT      RATIO

  (JH)   JUNIOR HIGH          53.934  100.00         4.764   100.00    35.78       11.32          4.64   100.00    1.026.72
                      -------------- ------- ------------ ------- ------- ---------  ----------- ------- -----------
  (**)  CRSE LVL TOTALS       53.934  100.00         4.764   100.00    35.78       11.32          4.64   100.00    1.026.72
                      ============== ======= ============ ======= ======= =========  =========== ======= ===========
ITER = (01)  BASE 1972/73             A   S M A L L   A L B E R T A   S C H O O L                               01/05/73
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL                       1.6-(06) PAGE   20

********************************************************         *******************************************************
*                                                      *         * - (0015) SEN. LANG. ARTS   DEPARTMENT               *
*      O R G A N I Z A T I O N A L   B U D G E T       *         *       (0004)  SENIOR HIGH         DIVISION          *
*                                                      *         *         (0002)    SENIOR              SCHOOL        *
********************************************************         *******************************************************

                                                                                          PERCENT OF      PERCENT OF
                             SALARY      FULL TIME                                      ORGANIZATIONAL  INSTRUCTIONAL
                               RATE      EQUIVALENT        PERCENT              COSTS      BUDGET          BUDGET
CHAIRMAN

FACULTY (BY RANK)
  (03)  FACULTY RANK--03     12.529             .58         100.00              7.267       93.02             4.4204
                            -------     -----------        -------     --------------     -------         ---------
  (**)  FACULTY TOTALS       12.529             .58         100.00              7.267       93.02             4.4204
                            =======                        =======
STAFF (BY CATEGORY)
                            -------     -----------        -------     --------------     -------         ---------
                            =======                        =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                           479        6.13              .2914
  (PE)  PERMANENT EQUIPT                                                           59         .76              .0359
  (BR)  BOOK REPAIR                                                                 7         .09              .0043
                                                                       --------------     -------         ---------
  (**)  EXPENSE TOTALS                                                            545        6.98              .3315

ADDITIONAL EXPENSES
                                        -----------                    --------------     -------         ---------
        ***  TOTALS  ***                        .58                             7.812      100.00             4.7519
                                        ===========                    ==============     =======         =========
                                         PER-        HOURS    PER-  PERCENT     UNIT            FTE   PER-    PRODUCT.
COSTS BY COURSE LEVEL          COST      CENT      PRODUCED   CENT  TOT HRS     COST        FACULTY   CENT     RATIO

  (TN)    GRADE TEN                4.036   51.66          272   50.65    2.04     14.84           .30   51.72      906.67
  (EV)   GRADE ELEVEN              1.865   23.87          110   20.48     .83     16.95           .14   24.14      785.71
  (TW)   GRADE TWELVE              1.911   24.46          155   28.86    1.16     12.33           .14   24.14    1.107.14
                        -------------- ------- ------------ ------- ------- ---------   ----------- ------- -----------
  (**)  CRSE LVL TOTALS          7.812  100.00          537  100.00    4.03     14.55           .58  100.00      925.86
                        ============== ======= ============ ======= ======= =========   =========== ======= ===========
ITER = (01)  BASE 1972/73            A   S M A L L   A L B E R T A   S C H O O L                                01/05/73
BASE = (**)                          - RESOURCE REQUIREMENTS PREDICTION MODEL                          1.6-(06) PAGE   21

*****************************************************************            ***************************************************************
*                                                               *            *  (0016) SEN. SOCIAL SCI.  DEPARTMENT                        *
*       O R G A N I Z A T I O N A L   B U D G E T               *            *     (0004)   SENIOR HIGH          DIVISION                  *
*                                                               *            *          (0002)    SENIOR               SCHOOL               *
*****************************************************************            ***************************************************************

                                                                                                     PERCENT OF         PERCENT OF
                               SALARY        FULL TIME                                           ORGANIZATIONAL      INSTRUCTIONAL
                                RATE        EQUIVALENT         PERCENT                    COSTS      BUDGET              BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (02)  FACULTY RANK--02       13.051                .71         100.00                   9.266       95.40              5.6363
                               -------      -----------         -------     --------------          -------           ---------
  (**)  FACULTY TOTALS         13.051                .71         100.00                   9.266       95.40              5.6363
                               =======                          =======

STAFF (BY CATEGORY)
                               -------      -----------         -------     --------------          -------           ---------
                               =======                          =======

EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                                     393        4.05              .2391
  (PE)  PERMANENT EQUIPT                                                                     49         .50              .0298
  (BR)  BOOK REPAIR                                                                           5         .05              .0030
                                                                            --------------          -------           ---------
  (**)  EXPENSE TOTALS                                                                      447        4.60              .2719

ADDITIONAL EXPENSES
                                            -----------                     --------------          -------           ---------
          ***  TOTALS  ***                           .71                                  9.713      100.00              5.9082
                                            ===========                     ==============          =======           =========

                                            PER-          HOURS      PER-   PERCENT      UNIT          FTE       PER-     PRODUCT.
COSTS BY COURSE LEVEL            COST       CENT       PRODUCED      CENT   TOT HRS      COST        FACULTY     CENT      RATIO

  (TN)    GRADE TEN             2.122      21.85           162      36.65     1.22      13.10           .15     21.13    1.080.00
  (EV)    GRADE ELEVEN          5.673      58.41           190      42.99     1.43      29.86           .42     59.15      452.38
  (TW)    GRADE TWELVE          1.918      19.75            90      20.36      .68      21.31           .14     19.72      642.86
                      -------------- -------- ------------- -------- -------- ----------    ---------- -------- -----------
  (**)    CRSE LVL TOTALS       9.713     100.00           442     100.00     3.32      21.98           .71    100.00      622.54
                      ============== ======== ============= ======== ======== ==========    ========== ======== ===========
ITER = (01)  BASE 1972/73          A   S M A L L   A L B E R T A   S C H O O L                                    01/05/73
BASE = (**)                        RESOURCE REQUIREMENTS PREDICTION MODEL                              1.6-(06) PAGE    22

******************************************************            *****************************************************
*                                                    *            *  (0017) SENIOR SCIENCE     DEPARTMENT              *
*     O R G A N I Z A T I O N A L   B U D G E T      *            *      (0004)  SENIOR HIGH           DIVISION        *
*                                                    *            *          (0002)    SENIOR              SCHOOL      *
******************************************************            *****************************************************

                                                                                          PERCENT OF       PERCENT OF
                               SALARY       FULL TIME                                   ORGANIZATIONAL   INSTRUCTIONAL
                                RATE        EQUIVALENT        PERCENT            COSTS      BUDGET           BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (02)  FACULTY RANK--02      13,000              .57           89.06             7,410      88.07            4.5074
  (05)  FACULTY RANK--05       8,471              .07           10.94               593       7.05             .3607
                             -------      -----------         -------     -------------    -------         ---------
  (**)  FACULTY TOTALS        12,505              .64          100.00             8,003      95.12            4.8681
                             =======                          =======
STAFF (BY CATEGORY)
                             -------      -----------         -------     -------------    -------         ---------
                             =======                          =======

EXPENSES (BY TYPE)                                                                  363       4.31             .2208
  (IM)  INST. MATERIALS                                                              44        .52             .0268
  (PE)  PERMANENT EQUIPT                                                              4        .05             .0024
  (BR)  BOOK REPAIR                                                       -------------    -------         ---------
                                                                                    411       4.88             .2500
  (**)  EXPENSE TOTALS

ADDITIONAL EXPENSES
                                          -----------                     -------------    -------         ---------
        ***  TOTALS  ***                          .64                             8,414     100.00            5.1181
                                          ===========                     =============    =======         =========

                                            PER-         HOURS   PER-   PERCENT      UNIT          FTE     PER-    PRODUCT.
COSTS BY COURSE LEVEL              COST     CENT      PRODUCED   CENT   TOT HRS      COST      FACULTY     CENT      RATIO

  (TN)    GRADE TEN               2,720    32.33           175  42.89      1.31     15.54          .22    34.38     795.45
  (EV)   GRADE ELEVEN             1,877    22.31            58  14.22       .44     32.36          .14    21.88     414.29
  (TW)   GRADE TWELVE             3,817    45.36           175  42.89      1.31     21.81          .28    43.75     625.00
                          ------------- -------  ----------- ------- ------- ---------  ----------- ------- ----------
  (**)  CRSE LVL TOTALS           8,414   100.00           408 100.00      3.06     20.62          .64   100.00     637.50
                          ============= =======  =========== ======= ======= =========  =========== ======= ==========
ITER = (01)  BASE 1972/73              A   S M A L L   A L B E R T A   S C H O O L                          01/05/73
BASE = (**)                                 RESOURCE REQUIREMENTS PREDICTION MODEL                     1.6-(06) PAGE   23

*****************************************************          *****************************************************
*                                                   *          *  (0018) SENIOR MATH          DEPARTMENT            *
*     O R G A N I Z A T I O N A L   B U D G E T     *          *       (0004)  SENIOR HIGH            DIVISION      *
*                                                   *          *           (0002)    SENIOR                SCHOOL   *
*****************************************************          *****************************************************

                                                                                       PERCENT OF         PERCENT OF
                               SALARY       FULL TIME                              ORGANIZATIONAL   INSTRUCTIONAL
                                RATE       EQUIVALENT        PERCENT         COSTS      BUDGET            BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (02)  FACULTY RANK--02      13.100              .14          20.00          1.834      24.84            1.1156
  (03)  FACULTY RANK--03      12.529              .14          20.00          1.754      23.76            1.0669
  (05)  FACULTY RANK--05       8.100              .42          60.00          3.402      46.08            2.0694
                             -------     ------------        -------   ------------    -------         ---------
  (**)  FACULTY TOTALS         9.986              .70         100.00          6.990      94.68            4.2519
                             =======                         =======
STAFF (BY CATEGORY)
                             -------     ------------        -------   ------------    -------         ---------
                             =======                         =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                         348       4.71             .2117
  (PE)  PERMANENT EQUIPT                                                         42        .57             .0255
  (BR)  BOOK REPAIR                                                               3        .04             .0018
                                                                       ------------    -------         ---------
  (**)  EXPENSE TOTALS                                                          393       5.32             .2391

ADDITIONAL EXPENSES
                                         ------------                  ------------    -------         ---------
       ***  TOTALS  ***                           .70                         7.383     100.00            4.4909
                                         ============                  ============    =======         =========
                                    PER-         HOURS    PER-  PERCENT       UNIT         FTE    PER-   PRODUCT.
COSTS BY COURSE LEVEL       COST    CENT      PRODUCED    CENT  TOT HRS       COST     FACULTY    CENT     RATIO

  (TN)   GRADE TEN         3.081   41.73           191   48.72     1.43      16.13         .28   40.00    682.14
  (EV)   GRADE ELEVEN      3.099   41.97           131   33.42      .98      23.66         .28   40.00    467.86
  (TW)   GRADE TWELVE      1.203   16.29            70   17.86      .53      17.19         .14   20.00    500.00
               ------------ ------- ------------ ------- ------- ---------   ---------- ------- ---------
  (**)  CRSE LVL TOTALS    7.383  100.00           392  100.00     2.94      18.83         .70  100.00    560.00
               ============ ======= ============ ======= ======= =========   ========== ======= =========
ITER = (01)  BASE 1972/73            A   S M A L L   A L B E R T A   S C H O O L                                01/05/73
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL                          1.6-(06) PAGE   24

**************************************************          **************************************************
*                                                *          *  (0019) SENIOR PHYS. ED.  DEPARTMENT            *
*     O R G A N I Z A T I O N A L   B U D G E T  *          *       (0004)  SENIOR HIGH          DIVISION     *
*                                                *          *           (0002)   SENIOR               SCHOOL  *
**************************************************          **************************************************

                                                                                         PERCENT OF       PERCENT OF
                                   SALARY        FULL TIME                                ORGANIZATIONAL  INSTRUCTIONAL
                                    RATE         EQUIVALENT        PERCENT          COSTS     BUDGET           BUDGET
CHAIRMAN

FACULTY (BY RANK)
  (05)  FACULTY RANK--05           8,478               .41         100.00           3,476      92.62            2.1144
                                  -------      -----------         -------  -------------    -------         ---------
  (**)  FACULTY TOTALS             8,478               .41         100.00           3,476      92.62            2.1144
                                  =======                          =======
STAFF (BY CATEGORY)
                                  -------      -----------         -------  -------------    -------         ---------
                                  =======                          =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                               246       6.55             .1496
  (PE)  PERMANENT EQUIPT                                                               29        .77             .0176
  (BR)  BOOK REPAIR                                                                     2        .05             .0012
                                                                            -------------    -------         ---------
  (**)  EXPENSE TOTALS                                                                277       7.38             .1685

ADDITIONAL EXPENSES
                                               -----------                  -------------    -------         ---------
        ***  TOTALS  ***                               .41                          3,753     100.00            2.2829
                                               ===========                  =============    =======         =========

                                          PER-        HOURS     PER-  PERCENT     UNIT          FTE     PER-     PRODUCT.
COSTS BY COURSE LEVEL            COST     CENT     PRODUCED     CENT  TOT HRS     COST      FACULTY     CENT        RATIO

  (TN)    GRADE TEN             1,273    33.92           86    31.05      .65    14.80          .14    34.15       614.29
  (EV)   GRADE ELEVEN           1,233    32.85          130    46.93      .98     9.48          .13    31.71     1,000.00
  (TW)   GRADE TWELVE           1,247    33.23           61    22.02      .46    20.44          .14    34.15       435.71
                        ------------- -------  ----------- -------  -------  --------  ----------- -------  -----------
  (**)  CRSE LVL TOTALS         3,753   100.00          277   100.00     2.08    13.55          .41   100.00       675.61
                        ============= =======  =========== =======  =======  ========  =========== =======  ===========
ITER = (01)  BASE 1972/73              A   S M A L L   A L B E R T A   S C H O O L                             01/05/73
BASE = (**)                               RESOURCE REQUIREMENTS PREDICTION MODEL                      1.6-(06) PAGE   25

*******************************************************          *******************************************************
*                                                     *          *  (0020) SENIOR HOME EC.   DEPARTMENT                *
*     O R G A N I Z A T I O N A L   B U D G E T       *          *       (0004)  SENIOR HIGH          DIVISION         *
*                                                     *          *           (0002)    SENIOR              SCHOOL      *
*******************************************************          *******************************************************

                             SALARY      FULL TIME                                         PERCENT OF      PERCENT OF
                              RATE      EQUIVALENT       PERCENT              COSTS      ORGANIZATIONAL  INSTRUCTIONAL
CHAIRMAN                                                                                     BUDGET          BUDGET

FACULTY (BY RANK)
  (05)  FACULTY RANK--05     8.477             .30        100.00               2.543         90.98            1.5469
                             -------   -----------        -------    --------------        -------        ----------
  (**)  FACULTY TOTALS       8.477             .30        100.00               2.543         90.98            1.5469
                             =======                      =======
STAFF (BY CATEGORY)
                             -------   -----------        -------    --------------        -------        ----------
                             =======                      =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                          136          4.87             .0827
  (PE)  PERMANENT EQUIPT                                                          16           .57             .0097
                                                                     --------------        -------        ----------
  (**)  EXPENSE TOTALS                                                           152          5.44             .0925

ADDITIONAL EXPENSES                                                              100          3.58             .0608
                                       -----------                   --------------        -------        ----------
        ***  TOTALS  ***                       .30                             2.795        100.00            1.7001
                                       ===========                   ==============        =======        ==========
                                        PER-          HOURS      PER-   PERCENT      UNIT            FTE     PER-     PRODUCT.
COSTS BY COURSE LEVEL           COST    CENT       PRODUCED      CENT   TOT HRS      COST        FACULTY     CENT      RATIO

  (TN)    GRADE TEN            1.566   56.03             75     48.70       .56     20.88            .17    56.67      441.18
  (EV)    GRADE ELEVEN         1.210   43.29             59     38.31       .44     20.51            .13    43.33      453.85
  (TW)    GRADE TWELVE            19     .68             20     12.99       .15       .95
                        ------------- -------  ------------   -------   -------  --------    ----------- -------  ----------
  (**)  CRSE LVL TOTALS        2.795  100.00            154    100.00      1.16     18.15            .30  100.00      513.33
                        ============= =======  ============   =======   =======  ========    =========== =======  ==========
ITER = (01)  BASE 1972/73          A   S M A L L   A L B E R T A   S C H O O L                              01/05/73
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL                    1.6-(06) PAGE   26

***************************************************          ***************************************************
*                                                 *          *  (0021) SENIOR IND. ARTS  DEPARTMENT            *
*      O R G A N I Z A T I O N A L   B U D G E T  *          *     (0004)   SENIOR HIGH          DIVISION      *
*                                                 *          *          (0002)      SENIOR            SCHOOL   *
***************************************************          ***************************************************

                                                                                         PERCENT OF      PERCENT OF
                              SALARY       FULL TIME                                ORGANIZATIONAL  INSTRUCTIONAL
                               RATE       EQUIVALENT        PERCENT           COSTS       BUDGET          BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (06)  FACULTY RANK--06      7,786              .29         100.00           2,258        81.90          1.3735
                             -------     -----------        -------   -------------      -------       ---------
  (**)  FACULTY TOTALS        7,786              .29         100.00           2,258        81.90          1.3735
                             =======                        =======
STAFF (BY CATEGORY)
                             -------     -----------        -------   -------------      -------       ---------
                             =======                        =======

EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                         220         7.98           .1338
  (PE)  PERMANENT EQUIPT                                                         27          .98           .0164
  (BR)  BOOK REPAIR                                                               2          .07           .0012
                                                                      -------------      -------       ---------
  (**)  EXPENSE TOTALS                                                          249         9.03           .1515

ADDITIONAL EXPENSES                                                             250         9.07           .1521
                                         -----------                  -------------      -------       ---------
        ***  TOTALS  ***                         .29                          2,757       100.00          1.6770
                                         ===========                  =============      =======       =========

                                        PER-          HOURS     PER-   PERCENT      UNIT           FTE       PER-      PRODUCT.
COSTS BY COURSE LEVEL            COST   CENT       PRODUCED     CENT   TOT HRS      COST       FACULTY       CENT         RATIO

  (TN)     GRADE TEN            1,385  50.24             91    36.69       .68     15.22           .15      51.72        606.67
  (EV)     GRADE ELEVEN         1,306  47.37             90    36.29       .68     14.51           .14      48.28        642.86
  (TW)     GRADE TWELVE            66   2.39             67    27.02       .50       .99
          -------------------- ------- ------------- -------- -------- ---------   ----------- -------- -----------
  (**)  CRSE LVL TOTALS         2,757 100.00            248   100.00      1.86     11.12           .29     100.00        855.17
          ==================== ======= ============= ======== ======== =========   =========== ======== ===========
                                                                                                                   01/05/73
ITER = (01)  BASE 1972/73               A   S M A L L   A L B E R T A   S C H O O L                      1.6-(06) PAGE   27
BASE = (**)                                 RESOURCE REQUIREMENTS PREDICTION MODEL
*****************************************************      *****************************************************
*                                                   *      *  (0022) SECOND LANGUAGE    DEPARTMENT              *
*     O R G A N I Z A T I O N A L   B U D G E T     *      *     (0004)   SENIOR HIGH            DIVISION       *
*                                                   *      *        (0002)    SENIOR                SCHOOL      *
*****************************************************      *****************************************************
                                                                                       PERCENT OF    PERCENT OF
                             SALARY     FULL TIME                                   ORGANIZATIONAL  INSTRUCTIONAL
                              RATE      EQUIVALENT         PERCENT           COSTS      BUDGET          BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (05)  FACULTY RANK--05     8.600            .43          100.00            3.698       94.65          2.2494
                            -------   -----------         -------   --------------     -------       ---------
  (**)  FACULTY TOTALS       8.600            .43          100.00            3.698       94.65          2.2494
                            =======                       =======

STAFF (BY CATEGORY)         -------   -----------         -------   --------------     -------       ---------
                            =======                       =======

EXPENSES (BY TYPE)                                                             185        4.74           .1125
  (IM)  INST. MATERIALS                                                         22         .56           .0134
  (PE)  PERMANENT EQUIPT                                                         2         .05           .0012
  (BR)  BOOK REPAIR                                                 --------------     -------       ---------
                                                                               209        5.35           .1271
  (**)  EXPENSE TOTALS

ADDITIONAL EXPENSES                   -----------                   --------------     -------       ---------
        ***  TOTALS  ***                      .43                            3.907      100.00          2.3765
                                      ===========                   ==============     =======       =========

                                         PER-         HOURS    PER-   PERCENT     UNIT          FTE     PER-    PRODUCT.
COSTS BY COURSE LEVEL           COST     CENT      PRODUCED    CENT   TOT HRS     COST      FACULTY     CENT      RATIO

  (TN)    GRADE TEN            1.296    33.17            91   43.75       .68    14.24          .14    32.56     650.00
  (EV)    GRADE ELEVEN         1.274    32.61            70   33.65       .53    18.20          .14    32.56     500.00
  (TW)    GRADE TWELVE         1.337    34.22            47   22.60       .35    28.45          .15    34.88     313.33
                       -------------  -------  ------------  ------   -------  ---------   ----------  -------  ----------
  (**)    CRSE LVL TOTALS      3.907   100.00           208  100.00      1.56    18.78          .43   100.00     483.72
                       =============  =======  ============  ======   =======  =========   ==========  =======  ==========
ITER = (01)  BASE 1972/73            A   S M A L L   A L B E R T A   S C H O O L                                    01/05/73
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL                               1.6-(06) PAGE   28

******************************************************       ********************************************************
*                                                    *       *  (0023) BUSINESS EDUC.     DEPARTMENT                 *
*    O R G A N I Z A T I O N A L   B U D G E T       *       *     (0004)   SENIOR HIGH          DIVISION            *
*                                                    *       *        (0002)     SENIOR              SCHOOL          *
******************************************************       ********************************************************
                                                                                         PERCENT OF      PERCENT OF
                                    SALARY      FULL TIME                               ORGANIZATIONAL  INSTRUCTIONAL
                                     RATE       EQUIVALENT       PERCENT           COSTS    BUDGET          BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (02)  FACULTY RANK--02            13.000            .07         15.91              910     18.35           .5535
  (04)  FACULTY RANK--04             9.570            .37         84.09            3.541     71.41          2.1539
                                   -------    -----------       -------    -------------   -------       ---------
  (**)  FACULTY TOTALS              10.116            .44        100.00            4.451     89.76          2.7075
                                   =======                      =======
STAFF (BY CATEGORY)
                                   -------    -----------       -------    -------------   -------       ---------
                                   =======                      =======

EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                              186      3.75           .1131
  (PE)  PERMANENT EQUIPT                                                              21       .42           .0128
  (BR)  BOOK REPAIR                                                                    1       .02           .0006
                                                                           -------------   -------       ---------
  (**)  EXPENSE TOTALS                                                               208      4.19           .1265

ADDITIONAL EXPENSES                                                                  300      6.05           .1825
                                              -----------                  -------------   -------       ---------
        ***  TOTALS  ***                              .44                          4,959    100.00          3.0165
                                              ===========                  =============   =======       =========

                                           PER-         HOURS   PER-   PERCENT      UNIT          FTE    PER-     PRODUCT.
COSTS BY COURSE LEVEL            COST      CENT      PRODUCED   CENT   TOT HRS      COST       FACULTY   CENT      RATIO

  (TN)    GRADE TEN             1,976     39.85           104   49.76      .78     19.00           .16   36.36      650.00
  (EV)    GRADE ELEVEN          1,500     30.25            61   29.19      .46     24.59           .14   31.82      435.71
  (TW)    GRADE TWELVE          1,483     29.91            44   21.05      .33     33.70           .14   31.82      314.29
                          ------------- -------  ------------ ------- -------  ---------  ---------- -------  ----------
  (**)    CRSE LVL TOTALS       4,959    100.00           209  100.00     1.57     23.73           .44  100.00      475.00
                          ============= =======  ============ ======= =======  =========  ========== =======  ==========
                                                                                                              01/05/73
ITER = (01)  BASE 1972/73            A   S M A L L   A L B E R T A   S C H O O L                    1.6-(06) PAGE   29
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL
*****************************************************          ***************************************************
*                                                   *          *  (0024) FINE ARTS           DEPARTMENT           *
*     O R G A N I Z A T I O N A L   B U D G E T     *          *     (0004)  SENIOR HIGH            DIVISION      *
*                                                   *          *        (0002)    SENIOR               SCHOOL     *
*****************************************************          ***************************************************
                                                                                   PERCENT OF      PERCENT OF
                              SALARY      FULL TIME                              ORGANIZATIONAL  INSTRUCTIONAL
                               RATE      EQUIVALENT      PERCENT          COSTS      BUDGET          BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (02)  FACULTY RANK--02     13.000             .07       100.00            910      93.81           .5535
                             -------   ------------      -------   ------------    -------      ----------
  (**)  FACULTY TOTALS       13.000             .07       100.00            910      93.81           .5535
                             =======                     =======

STAFF (BY CATEGORY)          -------   ------------      -------   ------------    -------      ----------
                             =======                     =======

EXPENSES (BY TYPE)                                                           54       5.57           .0328
  (IM)  INST. MATERIALS                                                       6        .62           .0036
  (PE)  PERMANENT EQUIPT                                           ------------    -------      ----------
                                                                             60       6.19           .0365
  (**)  EXPENSE TOTALS

ADDITIONAL EXPENSES                    ------------                ------------    -------      ----------
                                                .07                         970     100.00           .5900
        ***  TOTALS  ***               ============                ============    =======      ==========

                                        PER-           HOURS    PER-   PERCENT      UNIT         FTE     PER-     PRODUCT.
COSTS BY COURSE LEVEL           COST    CENT        PRODUCED    CENT   TOT HRS      COST      FACULTY    CENT      RATIO

  (TN)   GRADE TEN               965   99.48              55   90.16       .41     17.55          .07  100.00     785.71
  (EV)   GRADE ELEVEN              5     .52               6    9.84       .05       .83
                        ------------ -------  --------------  ------   -------  --------   ----------  ------ ----------
  (**)   CRSE LVL TOTALS         970  100.00              61  100.00       .46     15.90          .07  100.00     871.43
                        ============ =======  ==============  ======   =======  ========   ==========  ====== ==========
ITER = (01)  BASE 1972/73          A  S M A L L   A L B E R T A   S C H O O L                                      01/05/73
BASE = (**)                           RESOURCE REQUIREMENTS PREDICTION MODEL                             1.6-(06) PAGE   30

***************************************************         **************************************************
*                                                 *         *                                                *
*    O R G A N I Z A T I O N A L   B U D G E T    *         *      (0004)  SENIOR HIGH          DIVISION     *
*                                                 *         *        (0002)     SENIOR              SCHOOL   *
***************************************************         **************************************************

                                                                                    PERCENT OF        PERCENT OF
                             SALARY       FULL TIME                               ORGANIZATIONAL   INSTRUCTIONAL
                              RATE        EQUIVALENT      PERCENT         COSTS      BUDGET            BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (02)  FACULTY RANK--02     13,032          1.56          34.14         20,330      38.75            12.3663
  (03)  FACULTY RANK--03     12,529           .72          15.75          9,021      17.19             5.4873
  (04)  FACULTY RANK--04      9,570           .37           8.10          3,541       6.75             2.1539
  (05)  FACULTY RANK--05      8,412          1.63          35.67         13,712      26.14             8.3407
  (06)  FACULTY RANK--06      7,786           .29           6.35          2,258       4.30             1.3735
                             -------    -----------       -------    -------------   -------          ---------
  (**)  FACULTY TOTALS       10,692          4.57         100.00         48,862      93.14            29.7218
                             =======                      =======

STAFF (BY CATEGORY)
                             -------    -----------       -------    -------------   -------          ---------
                             =======                      =======

EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                   2,610       4.97             1.5876
  (PE)  PERMANENT EQUIPT                                                    315        .60              .1916
  (BR)  BOOK REPAIR                                                          26        .05              .0158
                                                                     -------------   -------          ---------
  (**)  EXPENSE TOTALS                                                    2,951       5.62             1.7950

ADDITIONAL EXPENSES                                                         650       1.24              .3954
                                        -----------                  -------------   -------          ---------
        ***  TOTALS  ***                     4.57                        52,463     100.00            31.9122
                                        ===========                  =============   =======          =========

                                        PER-         HOURS      PER-    PERCENT     UNIT          FTE      PER-     PRODUCT.
COSTS BY COURSE LEVEL          COST     CENT       PRODUCED     CENT    TOT HRS     COST        FACULTY    CENT      RATIO

  (TN)     GRADE TEN          20,420    38.92         1,302     44.35     9.78      15.68         1.78     38.95     731.46
  (EV)     GRADE ELEVEN       19,042    36.30           905     30.82     6.80      21.04         1.66     36.32     545.18
  (TW)     GRADE TWELVE       13,001    24.78           729     24.83     5.47      17.83         1.13     24.73     645.13
         -------------- -------  ------------  -------  -------  ----------   -----------  -------  -----------
  (**)  CRSE LVL TOTALS       52,463   100.00         2,936    100.00    22.05      17.87         4.57    100.00     642.45
         ============== =======  ============  =======  =======  ==========   ===========  =======  ===========
ITER = (01)  BASE 1972/73          A   S M A L L   A L B E R T A   S C H O O L                                 01/05/73
BASE = (**)                             RESOURCE REQUIREMENTS PREDICTION MODEL                          1.6-(06) PAGE   31

**************************************************************       *************************************************************
*                                                            *       *                                                           *
*     O R G A N I Z A T I O N A L   B U D G E T              *       *       (0002)     SENIOR              SCHOOL               *
*                                                            *       *                                                           *
**************************************************************       *************************************************************

                                                                                                PERCENT OF        PERCENT OF
                               SALARY      FULL TIME                                          ORGANIZATIONAL    INSTRUCTIONAL
                                RATE       EQUIVALENT       PERCENT               COSTS           BUDGET            BUDGET

CHAIRMAN

FACULTY (BY RANK)
  (01)   FACULTY RANK--01      16.594           .18           1.95               2.987            2.81             1.8169
  (02)   FACULTY RANK--02      13.029          2.98          32.36              38.827           36.49            23.6177
  (03)   FACULTY RANK--03      12.379          1.19          12.92              14.731           13.85             8.9606
  (04)   FACULTY RANK--04       9.570           .66           7.17               6.316            5.94             3.8419
  (05)   FACULTY RANK--05       8.413          3.28          35.61              27.596           25.94            16.7861
  (06)   FACULTY RANK--06       7.786           .92           9.99               7.163            6.73             4.3571
                              -------  ------------       -------       --------------         -------         ----------
  (**)   FACULTY TOTALS        10.599          9.21         100.00              97.620           91.75            59.3803
                              =======                     =======
STAFF (BY CATEGORY)
                              -------  ------------       -------       --------------         -------         ----------
                              =======                     =======

EXPENSES (BY TYPE)
  (IM)   INST. MATERIALS                                                         5.341            5.02             3.2489
  (PE)   PERMANENT EQUIPT                                                          720             .68              .4380
  (BR)   BOOK REPAIR                                                                77             .07              .0468
  (GL)     GRASSLANDS                                                            1.639            1.54              .9970
                                                                        --------------         -------         ----------
  (**)   EXPENSE TOTALS                                                          7.777            7.31             4.7306

ADDITIONAL EXPENSES                                                              1.000             .94              .6083
                                       ------------                     --------------         -------         ----------
         ***  TOTALS  ***                      9.21                            106.397          100.00            64.7192
                                       ============                     ==============         =======         ==========

                                         PER-          HOURS    PER-   PERCENT       UNIT              FTE     PFR-       PRODUCT.
COSTS BY COURSE LEVEL          COST      CENT       PRODUCED    CENT   TOT HRS       COST          FACULTY     CENT        RATIO

  (JH)    JUNIOR HIGH         53.934    50.69          4.764   61.87     35.78      11.32             4.64    50.38     1.026.72
  (TN)     GRADE TEN          20.420    19.19          1.302   16.91      9.78      15.68             1.78    19.33       731.46
  (EV)    GRADE ELEVEN        19.042    17.90            905   11.75      6.80      21.04             1.66    18.02       545.18
  (TW)    GRADE TWELVE        13.001    12.22            729    9.47      5.47      17.83             1.13    12.27       645.13
                       ------------- -------  ------------- ------- -------  ---------      ----------- -------  -----------
  (**)   CRSE LVL TOTALS     106.397   100.00          7.700  100.00     57.83      13.82             9.21   100.00       836.05
                       ============= =======  ============= ======= =======  =========      =========== =======  ===========
ITER = (01)  BASE 1972/73           A   S M A L L   A L B E R T A   S C H O O L                                   01/05/73
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL                            1.6-(06) PAGE   32

**********************************************************      **********************************************************
*                                                        *      *                                                        *
*     O R G A N I Z A T I O N A L   B U D G E T          *      *             *** ALL ORGANIZATIONAL LEVELS ***          *
*                                                        *      *                                                        *
**********************************************************      **********************************************************

                                                                                          PERCENT OF       PERCENT OF
                                 SALARY        FULL TIME                                 ORGANIZATIONAL   INSTRUCTIONAL
                                  RATE         EQUIVALENT        PERCENT          COSTS      BUDGET           BUDGET
CHAIRMAN

FACULTY (BY RANK)
  (01)  FACULTY RANK--01         16,594               .18          1.16            2,987      1.82            1.8169
  (02)  FACULTY RANK--02         13,029              2.98         19.16           38,827     23.62           23.6177
  (03)  FACULTY RANK--03         12,379              1.19          7.65           14,731      8.96            8.9606
  (04)  FACULTY RANK--04          9,153              3.61         23.22           33,044     20.10           20.1000
  (05)  FACULTY RANK--05          8,435              3.79         24.37           31,968     19.45           19.4455
  (06)  FACULTY RANK--06          7,761              3.80         24.44           29,493     17.94           17.9400
                                -------       -----------       -------    -------------   -------         ---------
  (**)  FACULTY TOTALS            9,714             15.55        100.00          151,050     91.88           91.8807
                                =======                         =======
STAFF (BY CATEGORY)
                                -------       -----------       -------    -------------   -------         ---------
                                =======                         =======
EXPENSES (BY TYPE)
  (IM)  INST. MATERIALS                                                            9,241      5.62            5.6211
  (PE)  PERMANENT EQUIPT                                                           1,318       .80             .8017
  (BR)  BOOK REPAIR                                                                  150       .09             .0912
  (GL)    GRASSLANDS                                                               1,639      1.00             .9970
                                                                           -------------   -------         ---------
  (**)  EXPENSE TOTALS                                                            12,348      7.51            7.5110

ADDITIONAL EXPENSES                                                                1,000       .61             .6083
                                              -----------                  -------------   -------         ---------
        ***  TOTALS  ***                            15.55                        164,398    100.00          100.0000
                                              ===========                  =============   =======         =========
                                          PER-          HOURS   PER-  --PERCENT      UNIT         FTE     PER-     PRODUCT.
COSTS BY COURSE LEVEL             COST    CENT       PRODUCED   CENT   TOT HRS       COST     FACULTY     CENT      RATIO

  (PR)    PRIMARY               29,468   17.92          2,522  18.94     18.94      11.68        3.16    20.32      798.10
  (EL)   ELEMENTARY             28,533   17.36          3,094  23.24     23.24       9.22        3.18    20.45      972.96
  (JH)   JUNIOR HIGH            53,934   32.81          4,764  35.78     35.78      11.32        4.64    29.84    1,026.72
  (TN)    GRADE TEN             20,420   12.42          1,302   9.78      9.78      15.68        1.78    11.45      731.46
  (EV)   GRADE ELEVEN           19,042   11.58            905   6.80      6.80      21.04        1.66    10.68      545.18
  (TW)   GRADE TWELVE           13,001    7.91            729   5.47      5.47      17.83        1.13     7.27      645.13
                          ------------ -------  ------------- ------   -------  ---------  ---------- -------  ----------
  (**)  CRSE LVL TOTALS        164,398  100.00         13,316 100.00    100.00      12.35       15.55   100.00      856.33
                          ============ =======  ============= ======   =======  =========  ========== =======  ==========
ITER = (01)  BASE 1972/73              A   S M A L L   A L B E R T A   S C H O O L                                    01/05/73
BASE = (**)                              RESOURCE REQUIREMENTS PREDICTION MODEL                               1.6-(06) PAGE   33

**************************************************           **************************************************
*                                                *           *                                                *
*         P R O G R A M   B U D G E T            *           *        C O S T   P E R   S T U D E N T         *
*                                                *           *                                                *
**************************************************           **************************************************

INSTRUCTIONAL PROGRAM (BY STUDENT LEVEL)                       PERCENT   PERCENT                        PERCENT   PERCENT
                                        COST PER   NUMBER OF   PROGRAM   TOTAL               PROGRAM    PROGRAM   INSTR
                                        STUDENT    STUDENTS    STUDENTS  STUDENTS            COST       BUDGET    BUDGET

 (0001)     PRIMARY
        (01)  GRADE 1 OR 7               438.17      21.00      31.34      6.50          9,201.57      31.23      5.60
        (02)  GRADE 2 OR 8               444.01      12.00      17.91      3.72          5,328.12      18.08      3.24
        (03)  GRADE 3 OR 9               439.34      34.00      50.75     10.53         14,937.56      50.69      9.09
                                      ----------- ----------  -------   -------   ----------------   -------   -------
        (**)  WTD. AVG./TOTALS           439.81      67.00     100.00     20.74         29,467.25     100.00     17.92
                                                               =======                              =======

 (0002)    ELEMENTARY
        (04)  GRADE 4 OR 10              344.48      25.00      30.12      7.74          8,612.00      30.19      5.24
        (05)  GRADE 5 OR 11              342.64      30.00      36.14      9.29         10,279.20      36.03      6.25
        (06)  GRADE 6 OR 12              344.17      28.00      33.73      8.67          9,636.76      33.78      5.86
                                      ----------- ----------  -------   -------   ----------------   -------   -------
        (**)  WTD. AVG./TOTALS           343.71      83.00     100.00     25.70         28,527.96     100.00     17.35
                                                               =======                              =======

 (0003)    JUNIOR HIGH
        (01)  GRADE 1 OR 7               692.58      43.00      47.25     13.31         29,780.94      55.26     18.12
        (02)  GRADE 2 OR 8               526.67      27.00      29.67      8.36         14,220.09      26.39      8.65
        (03)  GRADE 3 OR 9               470.89      21.00      23.08      6.50          9,888.69      18.35      6.02
                                      ----------- ----------  -------   -------   ----------------   -------   -------
        (**)  WTD. AVG./TOTALS           592.19      91.00     100.00     28.17         53,889.72     100.00     32.78
                                                               =======                              =======

 (0004)    SENIOR MATRIC
        (04)  GRADE 4 OR 10              592.22      17.00      35.42      5.26         10,067.74      31.72      6.12
        (05)  GRADE 5 OR 11              785.51      14.00      29.17      4.33         10,997.14      34.65      6.69
        (06)  GRADE 6 OR 12              627.80      17.00      35.42      5.26         10,672.60      33.63      6.49
                                      ----------- ----------  -------   -------   ----------------   -------   -------
        (**)  WTD. AVG./TOTALS           661.20      48.00     100.00     14.86         31,737.48     100.00     19.31
                                                               =======                              =======

 (0005)   H SCHOOL DIPLOMA
        (04)  GRADE 4 OR 10              526.16      15.00      44.12      4.64          7,892.40      38.30      4.80
        (05)  GRADE 5 OR 11              724.99       5.00      14.71      1.56          3,624.95      17.59      2.20
        (06)  GRADE 6 OR 12              649.41      14.00      41.18      4.33          9,091.74      44.12      5.53
                                      ----------- ----------  -------   -------   ----------------   -------   -------
        (**)  WTD. AVG./TOTALS           606.15      34.00     100.00     10.53         20,609.09     100.00     12.54
                                                               =======                              =======
ITER = (01)  BASE 1972/73          A   S M A L L   A L B E R T A   S C H O O L                              01/05/73
BASE = (**)                            RESOURCE REQUIREMENTS PREDICTION MODEL                    1.6-(06) PAGE    34

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*                                                       *        *                                                       *
*              P R O G R A M   B U D G E T              *        *           C O S T   P E R   S T U D E N T             *
*                                                       *        *                                                       *
*********************************************************        *********************************************************

INSTRUCTIONAL PROGRAM (BY STUDENT LEVEL)                  PERCENT   PERCENT                       PERCENT   PERCENT
                                     COST PER   NUMBER OF  PROGRAM   TOTAL              PROGRAM   PROGRAM   INSTR
                                     STUDENT    STUDENTS  STUDENTS  STUDENTS              COST     BUDGET    BUDGET

   (****)   INSTITUTIONAL SUMMARY
            (01)   GRADE 1 OR 7        609.10      64.00              19.81          38,982.51               23.71
            (02)   GRADE 2 OR 8        501.24      39.00              12.07          19,548.21               11.89
            (03)   GRADE 3 OR 9        451.39      55.00              17.03          24,826.25               15.10
            (04)   GRADE 4 OR 10       466.18      57.00              17.65          26,572.14               16.16
            (05)   GRADE 5 OR 11       508.19      49.00              15.17          24,901.29               15.15
            (06)   GRADE 6 OR 12       498.32      59.00              18.27          29,401.10               17.88
                                   ----------- -----------           -------   ----------------            -------
            (**)   WTD. AVG./TOTALS    508.46     323.00             100.00         164,231.50               99.90
                                   =========== ===========           =======   ================            =======
ITER = (01)  BASE 1972/73              A  S M A L L   A L B E R T A   S C H O O L
BASE = (**)                               RESOURCE REQUIREMENTS PREDICTION MODEL                              01/05/73
                                                                                                   1.6-(06) PAGE   35
*****************************************************        *****************************************************
*                                                   *        *                                                   *
*     I N S T I T U T I O N A L   S U M M A R Y     *        *             A C T I V I T Y   C O S T S           *
*                                                   *        *                                                   *
*****************************************************        *****************************************************

      ACTIVITY NAME           ACTIVITY COST     ------------------- ESTIMATING EQUATION COEFFICIENTS -------------------
                                                      CONSTANT    ENROLL.   FACULTY     STAFF    HOURS  FAC-$ STAFF-$ BUDGET
  1.00 INSTRUCTION PGM
     1.10 GENERAL ACADEMIC           164.398          164.398
                              ---------------
           SUB-TOTAL                 164.398

 40.00 ACADEMIC SUPPORT
    40.10 LIBRARY SALARIES             5.314            5.314
                              ---------------
           SUB-TOTAL                   5.314

 50.00 STUDENT SERVICES
    50.30 COUNSEL. + GUID.             5.304            5.304
                              ---------------
           SUB-TOTAL                   5.304

 60.00 INSTIT. SUPPORT
    60.10 EXEC. MANAGEMENT            14.102           14.102
                              ---------------
           SUB-TOTAL                  14.102

 63.00 GEN ADMIN SERV
    63.10 ADMIN CLER ASSIS             3.334            3.334
    63.20 INSTR CLER ASSIS             2.552            2.552
                              ---------------
           SUB-TOTAL                   5.886

 65.00 PHYS PLANT +OPER
    65.10 SALARIES                    15.785           15.785
    65.20 UTILITIES                   10.349           10.349
    65.30 CARETAKER SUPPLY             1.500            1.500
    65.40 MAINTENANCE                  2.358            2.358
                              ---------------
           SUB-TOTAL                  29.952
                              ---------------
     ***  TOTAL  ***                 224.996
                              ===============
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